



Release Notes for StarOS™ Software Version 21.19.n12

First Published: September 9, 2021

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Introduction

This Release Note identifies changes and issues related to this software release. This emergency release is based on release 21.19.n11. These release notes are applicable to the VPC-SI and VPC-DI platforms.

NOTE: This 21.19.n12 release is solely intended for customers pursuing ANSSI certification. Please contact your local Sales or Support representative for more information.

Release Package Version Information

Table 1 - Release Package Version Information

Software Packages	Version
StarOS packages	21.19.n12, build 82044

Descriptions for the various packages provided with this release are located in [Release Package Descriptions](#).

Feature and Behavior Changes

The following features and/or behavior changes have been introduced in this emergency release.

Refer to the [Release Change Reference](#) for a complete list of feature and behavior changes associated with this software release.

Related Documentation

For a complete list of documentation available for this release, go to <http://www.cisco.com/c/en/us/support/wireless/asr-5000-series/products-installation-and-configuration-guides-list.html>.

Installation and Upgrade Notes

This Release Note does not contain installation and upgrade instructions. Refer to the existing installation documentation for specific installation and upgrade considerations.

Firmware Updates

There are no firmware upgrades required for this release.

Software Integrity Verification

To verify the integrity of the software image you have from Cisco, you can validate the SHA512 checksum information against the checksum identified by Cisco for the software.

Image checksum information is available through the following mechanisms:

- **Cisco.com Software Download Details:** To find the checksum, hover the mouse pointer over the software image you have downloaded.



At the bottom you find the SHA512 checksum, if you do not see the whole checksum you can expand it by pressing the "..." at the end.

- **.cksums file:** A file containing software image checksum information is distributed with the image files. The naming convention for this file is:

`<product>-<version>.cksums`

Example: `asr5500-21.4.0.cksums`

To validate the information, calculate a SHA512 checksum using the information in [Table 2](#) and verify that it matches either the one provided on the software download page.

To calculate a SHA512 checksum on your local desktop please see the table below.

Table 2 - Checksum Calculations per Operating System

Operating System	SHA512 checksum calculation command examples
Microsoft Windows	Open a command line window and type the following command > certutil.exe -hashfile <filename>.<extension> SHA512
Apple MAC	Open a terminal window and type the following command \$ shasum -a 512 <filename>.<extension>

Open Bugs in this Release

Operating System	SHA512 checksum calculation command examples
Linux	<p>Open a terminal window and type the following command</p> <pre>\$ sha512sum <filename>.<extension></pre> <p>Or</p> <pre>\$ shasum -a 512 <filename>.<extension></pre>
<p>NOTES:</p> <p><filename> is the name of the file.</p> <p><extension> is the file extension (e.g. .zip or .tgz).</p>	

If the SHA512 checksum matches, you can be sure that no one has tampered with the software image or the image has not been corrupted during download.

If the SHA512 checksum does not match, we advise you to not attempt upgrading any systems with the corrupted software image. Download the software again and verify the SHA512 checksum again. If there is a constant mismatch, please open a case with the Cisco Technical Assistance Center.

Certificate Validation

In 21.12.0 and later releases, software images for StarOS, VPC-DI, and VPC-SI, and the companion software packages for StarOS and VPC are signed via x509 certificates. In pre-21.12.0 releases, image signing is not supported for VPC-DI and VPC-SI images, and for StarOS and VPC companion software packages.

USP ISO images are signed with a GPG key.

For more information and instructions on how to validate the certificates, refer to the README file available with the respective software packages.

Open Bugs in this Release

The following table lists the known bugs that were found in, and/or that remain open in this software release.

NOTE: This software release may contain open bugs first identified in other releases. Additional information for all open bugs for this release are available in the [Cisco Bug Search Tool](#).

Table 3 - Open Bugs in this Release

Bug ID	Headline	Product Found*
CSCvu34579	show crypto statistics not display encode and decode data statics in SI and ASR55K	cups-cp
CSCvt26865	sessmgr task restart with fn: sessmgr_ggsn_cups_remove_sx_trans_node()	cups-cp
CSCvu70527	"Replay Errors" observed after perform switch over on CP	cups-cp
CSCvu88861	[BP-CUPS] huge number of session disconnects with reason sxfail-opr-get-usagereport	cups-cp
CSCvz38631	[CUPS CP] micro checkpoint failures and sessmgr 10396 error on standby CP	cups-cp
CSCvy96992	CUPS CP : SGW sess current counter show abnormal increase after ICSR switchover	cups-cp
CSCvu36561	Crash observed on UP at smgr_uplane_update_edr_references_in_all_rbases	cups-up

Open Bugs in this Release

Bug ID	Headline	Product Found*
CSCvw97015	"Sessmgr installing wrong TEP version in VPP, hence packets are dropped"	cups-up
CSCvs05924	[URR] [SXAB] Updated URR doesn't exist	cups-up
CSCvv14996	[BP_CUPS] Timedef rule matches if no timedef is configured	cups-up
CSCvu14090	[BP-CUPS] sessmgr restart at add_chunk() function	cups-up
CSCvu19385	[BP-CUPS] ICSR - Fatal Signal 11 uplane_sfw_nat_gr_handle_nat_realm_update	cups-up
CSCvu35075	IPSec SA rekey happens only if 'keepalive' is also configured	cups-up
CSCvy74044	[BP-CUPS]aaamgr in warn state on IMS UP	cups-up
CSCvt97779	"[BP_CUPS] CF: sessmgr recovery when done in a particular sequence, call gets dropped"	cups-up
CSCvu00150	[PLT-CUPS]: The p2p app-identifier tls-sni related CLIs failing at UP	cups-up
CSCvz55543	[BP-CUPS]:Fatal Signal 11: 11 at PC: [060ae641/X] freebuf()	cups-up
CSCvu35147	MONTE: eDRX Device: MME is not sending RIR when UE becomes reachable	mme
CSCvu70881	[MONTE] Missing AVP 3142 Monitoring-Event-Config-Status in IDA from MME	mme
CSCvu81405	Revert back CSCvr34106	mme
CSCvx97860	IMEI-TAC matching criteria failing during service request	mme
CSCvu19454	MME doesn't return the UE count in a geographical area when imsi-group is configured in hex-format	mme
CSCvu40373	MONTE: MME doesn't send ?Supported-Services? AVP in ISDA S6a	mme
CSCvu67421	MONTE : MSISDN value is wrongly enclosed into User-Name AVP instead of MSISDN AVP in RIR message	mme
CSCvq71949	Task restart while handling li session	mme
CSCvu69504	sessmgr restart occurred at diabase_peer_conn_res_info	mme
CSCvx23843	MONTE: S6a IDR NPC timers not sent to T6a in RIR and not sent to UE in TAU_ACCEPT	mme
CSCvy31118	MME should reject duplicate eNB IDs	mme
CSCvu20626	[MONTE] bulkstats counter issue for num-of-ues-in-geographical-area	mme
CSCvu35160	MONTE: MME sends RIR with a weird AVP User-Name value	mme
CSCvu18163	Recovery mechanism is not working as expected for CIOT calls after session manager restart	mme
CSCvu20041	Delete counter not incremented proeprly for Monte	mme
CSCvu70861	[MONTE] RIR is not sent in case if eDRX activated not during Attach but in TAU	mme
CSCvv34694	Sessmgr restarts seen at mme_hss_checkpoint_internal	mme
CSCvw03127	Frequent sessmgr restart on acs_flush_ttl_aged_entries_from_ip_pools	pdn-gw
CSCvy03998	Extend the Peer/IMS server status check mechanism to also include peer-host check	pdn-gw

Resolved Bugs in this Release

Bug ID	Headline	Product Found*
CSCVv59640	sessmgr_ipv4_process_inet_pkt_part3_pgw_ggsn	pdn-gw
CSCVw76775	Many sessmgr restarts seen on virtual PGW	pdn-gw
CSCVv05306	"After rekey, IPSec SA Pkts count not reset with IKEv2 SA re-establishment triggered by peer"	staros
CSCVw18493	Evaluation of staros for Treck ip stack vulnerabilities - 2nd batch - VU#114986	staros
* Information in the "Product Found" column identifies the product in which the bug was initially identified.		

Resolved Bugs in this Release

The following table lists the known bugs that are resolved in this specific software release.

NOTE: This software release may contain bug fixes first introduced in other releases. Additional information for all resolved bugs for this release are available in the [Cisco Bug Search Tool](#).

Table 4 - Resolved Bugs in this Release

Bug ID	Headline	Product Found*
CSCVz26308	CUPS SGW Crash smc_sxa_fill_sess_modify_req_trgr_cbrsp()	cups-cp
CSCVz00059	CUPS CP SM restart at API sgwdrv_process_egtpc_delete_bearer_ind()	cups-cp
CSCVz12277	CP sessmgr restart seen in acsmgr_dcca_process_msccs()	cups-cp
CSCVy87801	[CUPS]memory leak on functions acsmgr_allocate_cups_info() and acsmgr_allocate_cups_sef_info()	cups-cp
CSCVz29309	Multiple sessmgr restart is seen with sessmgr_pgw_find_trans_info_node_by_proc_type()	cups-cp
CSCVv80157	[BP-CUPS]Assert on Standby CP acsmgr_deallocate_call_obj() for QG Info	cups-cp
CSCVy95443	Memory leak observed upon session reconnection radius off / on" resiliency tes	cups-cp
CSCVy50850	[BP-CUPS] sessmgr restart "snx_uplane_driver_event_control_dispatch" during Longevity run	cups-up
CSCVy83173	CUPS UPF rulebase statistics limited to 50 rulebases	cups-up
CSCVz26137	[CUPS UP] - MSID Information disappears from "show sub all" after SRP Switchover	cups-up
CSCVz44817	CUPS UP - sessmgr crash in uplane_p2p_update_stats	cups-up
CSCVx66200	[BP-ICUPS]:SM crashes observed on active and standby with "acsmgr_deallocate_call_obj()"	pdn-gw
CSCVy13275	show lawful-intercept imei returns No matching LI session/trigger found with active data session	pdn-gw
CSCVs65289	[BP-ICUPS]:Policer row not created in one direction for accelerated flow	pdn-gw
CSCVz00817	BP-ICUPS: Continuous VPP restart resulted in segmentation fault and callmodel failing	pdn-gw
CSCVy98310	BP-ICUPS: sessmgr restart while running callmodel with SRP switchovers at 30 mins interval	pdn-gw
CSCVx60252	[CUPS-CP]: iftask crash on CUPS CP resulting in ICSR switchover	staros

Operator Notes

Bug ID	Headline	Product Found*
CSCvx52114	[UPF]:pending-traffic-treatment quota-exhausted drop is not working as expected	upf
* Information in the "Product Found" column identifies the product in which the bug was initially identified.		

Operator Notes

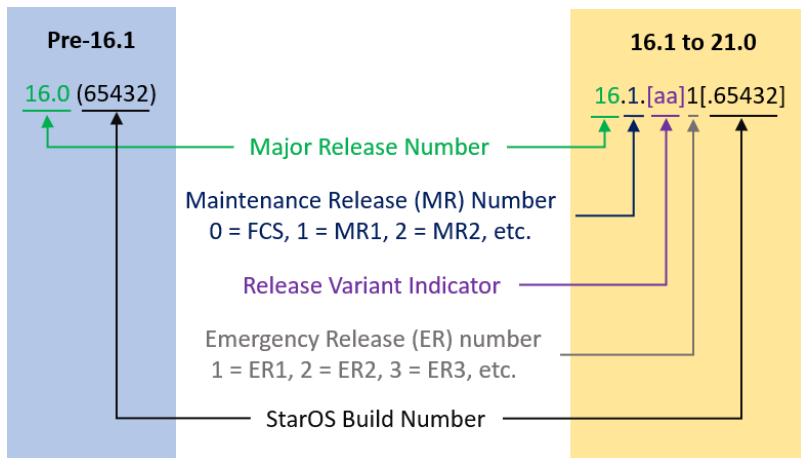
StarOS Version Numbering System

The output of the **show version** command displays detailed information about the version of StarOS currently running on the ASR 5x00 or Cisco Virtualized Packet Core platform.

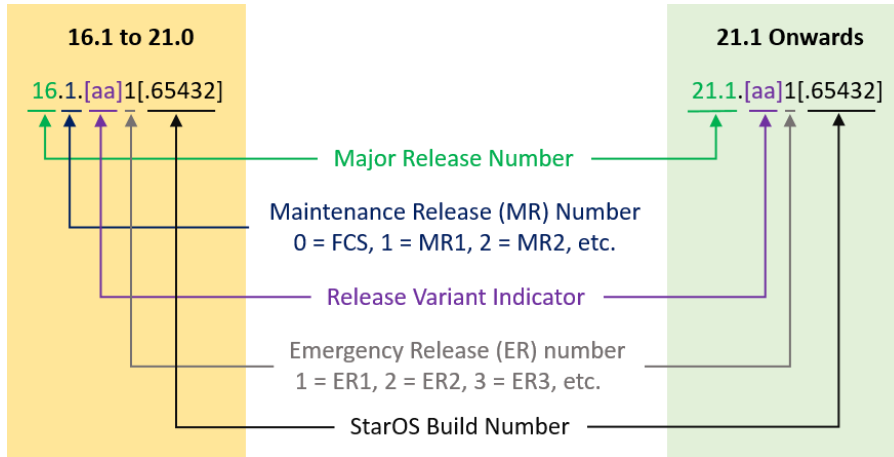
Prior to release 16.1, the *Image Version* field displayed a branch of software including the build number, for example "16.0 (55435)". Subsequent releases of software for the major release differed only in build number. Lab Quality/EFT releases versus deployment releases also differed only in build number.

From release 16.1 onwards, the output of the **show version** command, as well as the terminology used to describe the Build Version Number fields, has changed. Additionally, **show version** will display slightly different information depending on whether or not a build is suitable for deployment.

The Version Build Number for releases between 16.1 and 21.0 include a major, maintenance, and emergency release number, for example "16.1.2".



The Version Build Number for releases 21.1 and later include a major and emergency release number, for example, "21.1.1".



In either scenario, the appropriate version number field increments after a version has been released. The new version numbering format is a contiguous sequential number that represents incremental changes between releases. This format will facilitate identifying the changes between releases when using Bug Search Tool to research software releases.

Release Package Descriptions

[Table 5](#) provides descriptions for the packages that are available with this release.

Table 5 - Release Package Information

In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
ASR 5500		
asr5500-<release>.zip	asr5500-<release>.bin	Contains the signed ASR 5500 software image, the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
asr5500_T-<release>.zip	asr5500_T-<release>.bin	Contains the signed, trusted ASR 5500 software image, the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
StarOS Companion Package		
companion-<release>.zip	companion-<release>.tgz	Contains numerous files pertaining to this version of the StarOS including SNMP MIBs, RADIUS dictionaries, ORBEM clients. These files pertain to both trusted and non-trusted build variants. In 21.12.0 and later releases, the StarOS companion package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
VPC-DI		
qvpc-di-<release>.bin.zip	qvpc-di-<release>.bin	Contains the VPC-DI binary software image that is used to replace a previously deployed image on the flash disk in existing installations. In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.

In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
qvmc-di_T-<release>.bin.zip	qvmc-di_T-<release>.bin	<p>Contains the trusted VPC-DI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-<release>.iso.zip	qvmc-di-<release>.iso	<p>Contains the VPC-DI ISO used for new deployments, a new virtual machine is manually created and configured to boot from a CD image.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di_T-<release>.iso.zip	qvmc-di_T-<release>.iso	<p>Contains the trusted VPC-DI ISO used for new deployments, a new virtual machine is manually created and configured to boot from a CD image.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-template-vmware-<release>.zip	qvmc-di-template-vmware-<release>.tgz	<p>Contains the VPC-DI binary software image that is used to on-board the software directly into VMware.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-template-vmware_T-<release>.zip	qvmc-di-template-vmware_T-<release>.tgz	<p>Contains the trusted VPC-DI binary software image that is used to on-board the software directly into VMware.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-template-libvirt-kvm-<release>.zip	qvmc-di-template-libvirt-kvm-<release>.tgz	<p>Contains the same VPC-DI ISO identified above and additional installation files for using it on KVM.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-template-libvirt-kvm_T-<release>.zip	qvmc-di-template-libvirt-kvm_T-<release>.tgz	<p>Contains the same trusted VPC-DI ISO identified above and additional installation files for using it on KVM.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvmc-di-<release>.qcow2.zip	qvmc-di-<release>.qcow2.tgz	<p>Contains the VPC-DI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>

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In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
qvpc-di_T-<release>.qcow2.zip	qvpc-di_T-<release>.qcow2.tgz	<p>Contains the trusted VPC-DI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
VPC-SI		
qvpc-si-<release>.bin.zip	qvpc-si-<release>.bin	<p>Contains the VPC-SI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si_T-<release>.bin.zip	qvpc-si_T-<release>.bin	<p>Contains the trusted VPC-SI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si-<release>.iso.zip	qvpc-si-<release>.iso	<p>Contains the VPC-SI ISO used for new deployments, a new virtual machine is manually created and configured to boot from a CD image.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si_T-<release>.iso.zip	qvpc-si_T-<release>.iso	<p>Contains the trusted VPC-SI ISO used for new deployments a new virtual machine is manually created and configured to boot from a CD image.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si-template-vmware-<release>.zip	qvpc-si-template-vmware-<release>.ova	<p>Contains the VPC-SI binary software image that is used to on-board the software directly into VMware.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si-template-vmware_T-<release>.zip	qvpc-si-template-vmware_T-<release>.ova	<p>Contains the trusted VPC-SI binary software image that is used to on-board the software directly into VMware.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>
qvpc-si-template-libvirt-kvm-<release>.zip	qvpc-si-template-libvirt-kvm-<release>.tgz	<p>Contains the same VPC-SI ISO identified above and additional installation files for using it on KVM.</p> <p>In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.</p>

In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
qvmc-si-template-libvirt-kvm_T-<release>.zip	qvmc-si-template-libvirt-kvm_T-<release>.tgz	Contains the same trusted VPC-SI ISO identified above and additional installation files for using it on KVM. In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
qvmc-si-<release>.qcow2.zip	qvmc-si-<release>.qcow2.gz	Contains the VPC-SI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack. In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
qvmc-si_T-<release>.qcow2.zip	qvmc-si_T-<release>.qcow2.gz	Contains the trusted VPC-SI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack. In 21.12.0 and later releases, this package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.
VPC Companion Package		
companion-vpc-<release>.zip	companion-vpc-<release>.tgz	Contains numerous files pertaining to this version of the VPC including SNMP MIBs, RADIUS dictionaries, ORBEM clients. These files pertain to both VPC-DI and VPC-SI, and for trusted and non-trusted build variants. In 21.12.0 and later releases, the VPC companion package also includes the signature file, a verification script, the x509 certificate, and a README file containing information on how to use the script to validate the certificate.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at:

<http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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