



Release Notes for StarOS™ Software Version 21.13.16

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Introduction

This Release Notes identify changes and issues related to this software release. This emergency release is based on release 21.13.15. This Release Notes is applicable to the ASR5500, VPC-SI, and VPC-DI platforms.

Release Package Version Information

Software Packages	Version
StarOS packages	21.13.16, build 74077

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 the software release on which this emergency release is based.

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

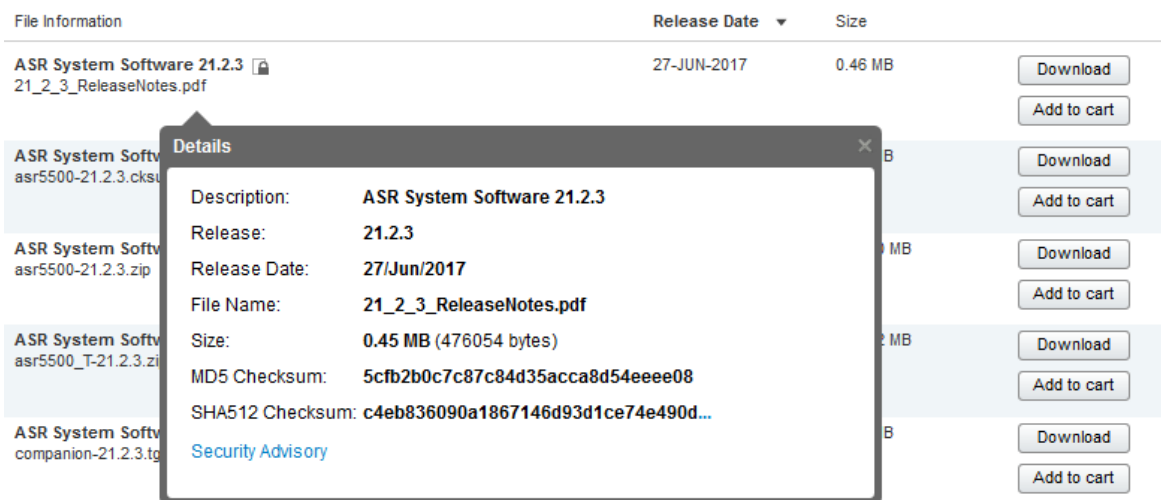
There are no firmware upgrades required for this release.

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 1](#) 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 1 - Checksum Calculations per Operating System

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

Open Bugs for 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

StarOS software images are signed via x509 certificates. Please view the .README file packaged with the software for information and instructions on how to validate the certificates.

NOTE: Image signing is not currently supported for VPC-SI and/or VPC-DI software packages.

Open Bugs for This Release

The table below highlights 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](#).

Bug ID	Headline	Product Found*
CSCvn14202	[BP-CUPS-VPP]Delay charging is having issues with Tear Down packets.	cups-up
CSCvo09852	[BP-CUPS-VPP] sessmgr restarts when task kill of sessmgr done on UP	cups-up
CSCvo14919	[BP-CUPS] Seg. fault at sn_slist_remove_by_key()	cups-up
CSCvo39232	[PLT-CUPS] memif packet drops observed with single call running HTTP traffic	cups-up
CSCvo47244	[BP-CUPS] Discrepancy in dropped packet count statistics after Gy quota exhausted	cups-up
CSCvo32237	[BP-ICUPS]: some UDP streams going to passive post ICSR switchover	pdn-gw
CSCvo89792	[BP-ICUPS]:servers-unreachable CCRU is not going for interim-quota exhaust	pdn-gw

Resolved Bugs for This Release

Bug ID	Headline	Product Found*
CSCvp05860	[BP-ICUPS] fastpath_row_read(): returned error 0x80002001 on Active	pdn-gw
CSCvp06042	[BP-ICUPS] : Sessmgr restarts observed after 8hrs of callmodel @PC: acs_http_pkt_inspection()	pdn-gw
CSCvo37441	wrong firewall Ruledef stats shown in 'show active-charging ruledef statistics all firewall wide'.	pdn-gw
CSCvp13975	[BP-ICUPS] : sessmgr_10207_info SMU-FAPI: Received Unsol FAPI event 1 messages in syslogs	pdn-gw
CSCvo99745	show CLI output shows incorrect AMBR values in LTE && 2G/3G && LTE on 21.13.M0	sae-gw
CSCvp16897	[BP-ICUPS] ITC dropped pkts are not seen in both direction for a single call though dropped at vpp	sae-gw
CSCvp18765	"[BP-ICUPS] : PassiveStream: Post qci change is dscp marking not working, vpp uses old qci-dscp mapng"	sae-gw
CSCvp01304	task restart reported on qvpc-di setup. confdmgr Function: confdmgr_fsm_state_wait_p1_handler()	staros
* Information in the "Product Found" column identifies the product in which the bug was initially identified.		

Resolved Bugs for This Release

The table below highlights 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](#).

Bug ID	Headline	Product Found*
CSCvp31063	Modify bearer request getting rejected due to IMEI check while using IMS APN	pdn-gw
CSCvr66978	Sessmgr restart upon sending EGTPU packet from SGW to PGW ingress	sgw
* Information in the "Product Found" column identifies the product in which the bug was initially identified.		

Operator Notes

StarOS Version Numbering System

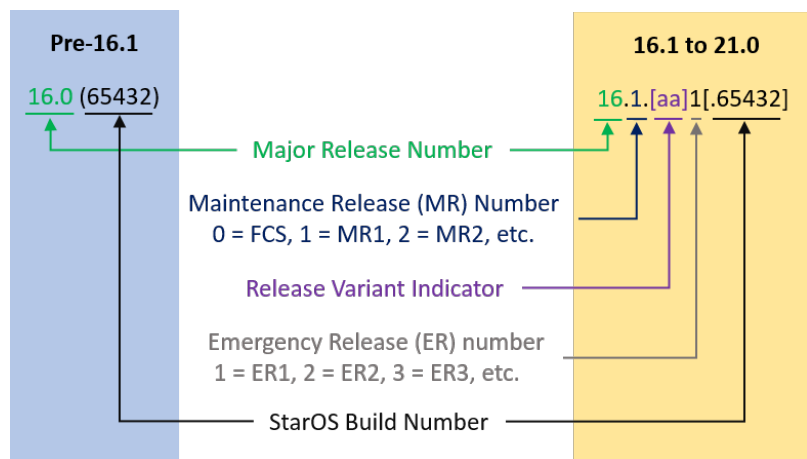
The output of the **show version** command displays detailed information about the version of StarOS currently running on the ASR 5x00 or Cisco Virtualized Packet Core platform.

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.

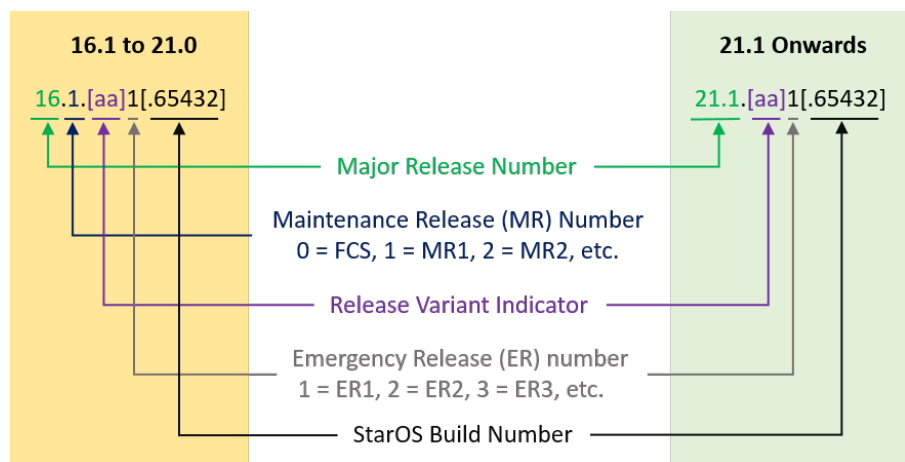
Operator Notes

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 2](#) lists provides descriptions for the packages that are available with this release.

Table 2 - Release Package Information

Package	Description
ASR 5500	

Package	Description
asr5500-<release>.bin	A zip file containing 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>.bin	A zip file containing 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.
VPC-DI	
qvpc-di-<release>.bin	The VPC-DI binary software image which is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-di_T-<release>.bin	The trusted VPC-DI binary software image which is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-di-<release>.iso	The VPC-DI ISO used for new deployments a new virtual machine is manually created and configured to boot from a CD image.
qvpc-di_T-<release>.iso	The trusted VPC-DI ISO used for new deployments a new virtual machine is manually created and configured to boot from a CD image.
qvpc-di-template-vmware-<release>.tgz	The VPC-DI binary software image that is used to on-board the software directly into Vmware.
qvpc-di-template-vmware_T-<release>.tgz	The trusted VPC-DI binary software image that is used to on-board the software directly into Vmware.
qvpc-di-template-libvirt-kvm-<release>.tgz	This is an archive that includes the same VPC-DI ISO identified above, but additional installation files for using it on KVM.
qvpc-di-template-libvirt-kvm_T-<release>.tgz	This is an archive that includes the same trusted VPC-DI ISO identified above, but additional installation files for using it on KVM.
qvpc-di-<release>.qcow2.tgz	The VPC-DI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack.
qvpc-di_T-<release>.qcow2.tgz	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.
VPC-SI	
qvpc-si-<release>.bin	The VPC-SI binary software image which is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-si_T-<release>.bin	The trusted VPC-SI binary software image which is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-si-<release>.iso	The VPC-SI ISO used for new deployments a new virtual machine is manually created and configured to boot from a CD image.

Package	Description
qvmc-si_T- <release>.iso	The trusted VPC-SI ISO used for new deployments a new virtual machine is manually created and configured to boot from a CD image.
qvmc-si-template- vmware-<release>.ova	The VPC-SI binary software image that is used to on-board the software directly into Vmware.
qvmc-si-template- vmware_T- <release>.ova	The trusted VPC-SI binary software image that is used to on-board the software directly into Vmware.
qvmc-si-template- libvirt-kvm- <release>.tgz	This is an archive that includes the same VPC-SI ISO identified above, but additional installation files for using it on KVM.
qvmc-si-template- libvirt-kvm_T- <release>.tgz	This is an archive that includes the same trusted VPC-SI ISO identified above, but additional installation files for using it on KVM.
qvmc-si-<release>. qcow2.gz	The VPC-SI binary software image in a format that can be loaded directly with KVM using an XML definition file, or with OpenStack.
qvmc-si_T-<release>. qcow2.gz	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.
StarOS Companion Package	
companion- <release>.tgz	An archive containing 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.

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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