



Release Notes for StarOS™ Software Version 21.21.1

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Introduction

This Release Notes identify changes and issues related to this software release. This emergency release is based on release 21.21.0. This Release Notes is applicable to the ASR5500, VPC-SI, and VPC-DI platforms.

Release Package Version Information

| Software Packages | Version |
|-------------------|----------------------|
| StarOS packages | 21.21.1, build 79014 |

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

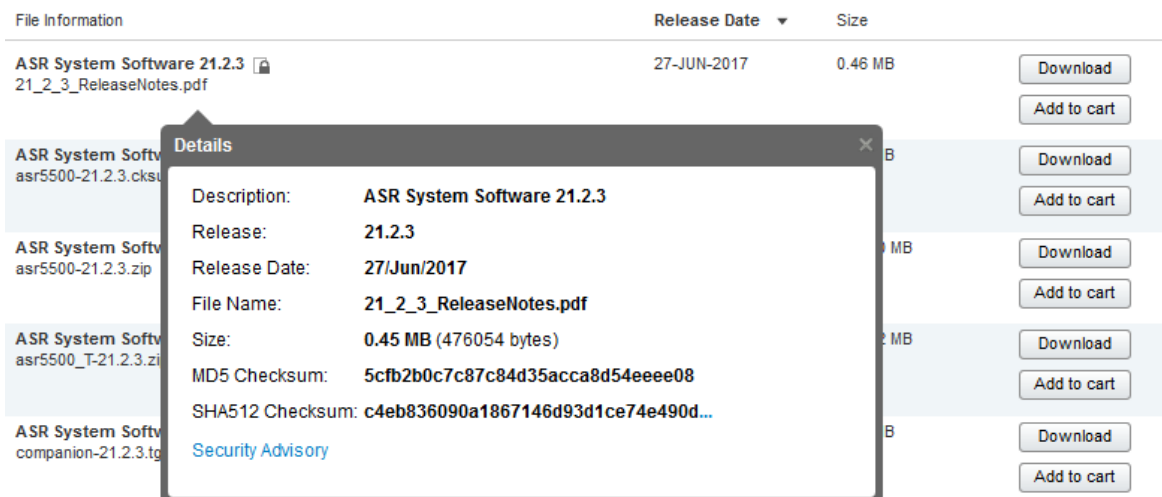
There are no firmware upgrades required for this release.

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> |
| Linux | Open a terminal window and type the following command <pre>\$ sha512sum <filename>.<extension></pre> <p>Or</p> <pre>\$ shasum -a 512 <filename>.<extension></pre> |

Open Bugs for This Release

| | |
|--|--|
| Operating System | SHA512 checksum calculation command examples |
| NOTES: <i><filename></i> is the name of the file. <i><extension></i> is the file extension (e.g. .zip or .tgz). | |

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* |
|---|---|----------------|
| CSCvu45618 | [BP-CUPS] huge number of session disconnects with reason sxfail-opr-get-usagereport | cups-cp |
| CSCvv91420 | [BP-CUPS]: Assertion failure at pgw_drv_fsm_handle_modify_bearer_rsp | cups-cp |
| CSCvv14996 | [BP_CUPS] Timedef rule matches if no timedef is configured | cups-up |
| CSCvv79637 | "[SNMP]SNMP mib compilation errors seen for starServiceChainName, starUPPlaneTsMissConfig" | cups-up |
| CSCvv66498 | PDN context is not established for IMS APN when E-RAB Modification is triggered | mme |
| CSCvu37233 | On VPC-DI Multiple Sessmgr restarts seen while doing SF card migration from active to standby | mme |
| CSCvv64823 | [MONTE] ue-reachable RIR missing with PSM | mme |
| CSCvu81466 | [MONTE Roaming] On VPC-DI while doing mmemgr restart seen 18K subs drop from total 1.4M | mme |
| CSCvw28806 | [MONTE]: Availability after DDN Failure without Max Number of Reports returns only 1 Report | mme |
| CSCvv88445 | Packet Loss in DSCP marked packets sent to IPv4 PDN UE via IPv4 EoGRE Access-Network | pdn-gw |
| * 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* |
|---|---|----------------|
| CSCv99205 | [BP] Sessmgr restart while handling modify bearer procedure | cups-cp |
| CSCv17435 | [BP-CUPS] Tot Currently act intercept call count not proper in "show li stats"; | cups-cp |
| CSCvt47005 | [BP-Legacy] Traffic allowed despite CCR failure with FHT continue discard traffic post recovery | pdn-gw |
| CSCv84576 | [21.15.48 FullVPP] PPTP-GRE Application protocol dropping Downlink packets towards UE | pdn-gw |
| CSCv58221 | [BP_PCT PGW] Diameter data fragmentation not working as expected | pdn-gw |
| CSCvs09553 | [BP-ICUPS]: Monsub pcap file's call id not changed after context replacement | pdn-gw |
| CSCv38048 | [ASR5500-DPC2]: Traffic throttling takes more than 5 min after UE Overload Protection In Progress | pdn-gw |
| CSCv79616 | sessmgr restart at sn_memblock_cache_get_mcblock_by_addr() | pdn-gw |
| CSCv73591 | "ADC over Gx : Flow-description in CCR-U from PGW, sent ipv6 address with 0 prefix length." | pdn-gw |
| CSCvu55467 | [BP-ICUPS] Session Controller restart observed during data_backup_read_abort | pdn-gw |
| CSCv69285 | [BP-ICUPS]: difference in intercepted call stats in 2 LI commands | pdn-gw |
| CSCv95793 | [Smoke2-ICUPS] In Monsub fastpath pcap files are not generated as expected. | pdn-gw |
| CSCv55376 | TTL validate and decrement ignore for VF NZ | pdn-gw |
| CSCvu27368 | Unable to remove EDR ULI Hex Encoding from rulebase with no option | pdn-gw |
| CSCv45493 | [BP-ICUPS]: Interception of UL/DI packets is not happening for Rule Based Gx-LI Dynamic Rule | sae-gw |
| CSCvu87645 | Wrong value of RX counter on 'show port utilization table' | sae-gw |
| CSCv51050 | 21.14: Port speed OID changes after port up/down | staros |
| CSCv94672 | VPP restart leading to reload of node and ICSR switchover | upf |
| * Information in the "Product Found" column identifies the product in which the bug was initially identified. | | |

Operator Notes

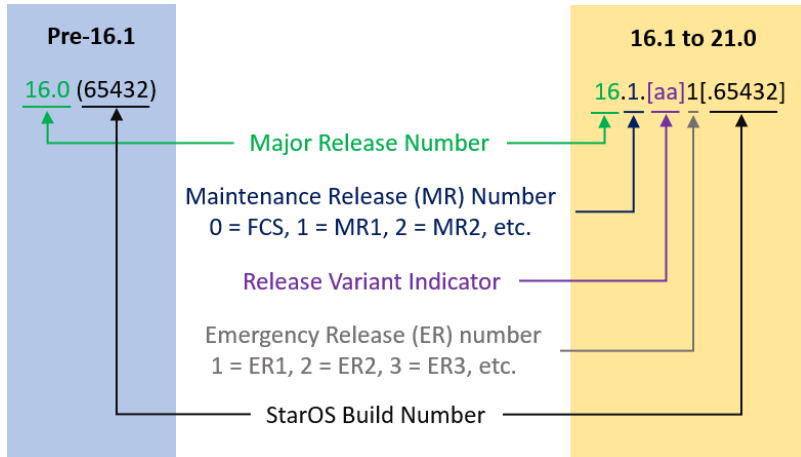
StarOS Version Numbering System

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.

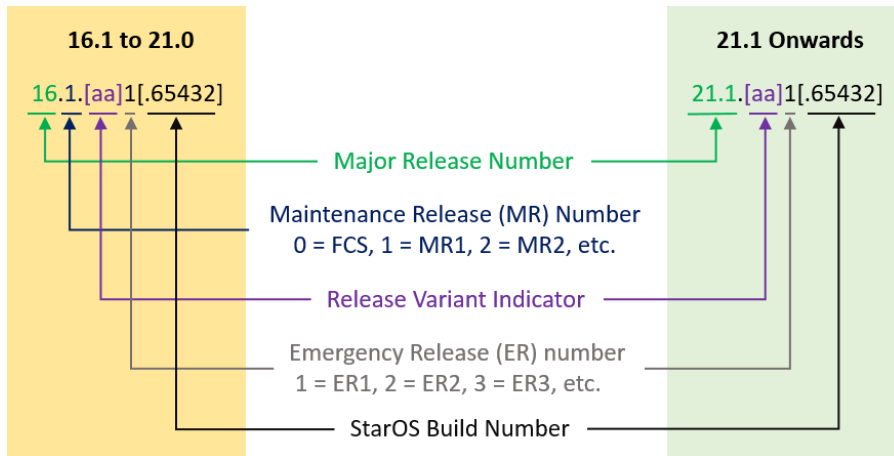
Prior to release 16.1, the *Image Version* field displayed a branch of software including the build number, for example "16.0 (55435)". Subsequent releases of software for the major release differed only in build number. Lab Quality/EFT releases versus deployment releases also differed only in build 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 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 | |
| qvm-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. |
| qvm-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. |
| qvm-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. |
| qvm-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. |
| qvm-di-template-vmware-<release>.tgz | The VPC-DI binary software image that is used to on-board the software directly into Vmware. |
| qvm-di-template-vmware_T-<release>.tgz | The trusted VPC-DI binary software image that is used to on-board the software directly into Vmware. |
| qvm-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. |
| qvm-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. |
| qvm-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. |
| qvm-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 | |
| qvm-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. |
| qvm-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. |
| qvm-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. |
| qvm-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. |
| qvm-si-template-vmware-<release>.ova | The VPC-SI binary software image that is used to on-board the software directly into Vmware. |
| qvm-si-template-vmware_T-<release>.ova | The trusted VPC-SI binary software image that is used to on-board the software directly into Vmware. |

| Package | Description |
|--|--|
| 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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