Release Notes for the StarOS™ Software Version 2024.02.I1

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Introduction

This Release Notes identifies changes and issues related to the Legacy Gateway (ASR 5500) software release.

Release Lifecycle Milestones

Release Lifecycle Milestone	Milestone	Date
First Customer Ship	FCS	30-April-2024
End of Life	EoL	29-Oct-2024
End of Software Maintenance	EoSM	29-Oct-2025
End of Vulnerability and Security Support	EoVSS	29-Oct-2025
Last Date of Support	LDoS	31-Oct-2026

Release Package Version Information

Software Packages	Version	Build Number
StarOS Package	2024.02.I1	21.28.m24.93891

Descriptions for the various packages provided with this release are available in the Release Package Descriptions section.

Verified Compatibility

Products	Version
ADC Plugin	2.74.0
RCM	20240528-071650Z
NED Package	ncs-6.1-rcm-nc.v21.28.mx_ 20240415-072244Z ncs-6.1.6-cisco-staros-5.52.4 ncs-6.1.1-etsi-sol003-1.13.18 ncs-6.1-openstack-cos-4.2.30 ncs-6.1.2.1-cisco-etsi-nfvo-4.7.3 ncs-6.1.2.1-esc-5.10.0.97
NSO-MFP	3.5.2024.02.g0

NOTE: Use only the compatible versions of p2p.

What's New in this Release

This version of Release Notes includes a new section titled **What's New in this Release** comprising all new features, enhancements, and behavior changes applicable for the release.

Features and Enhancements

There are no new features or enhancements in this specific 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 general installation and upgrade instructions. Refer to the existing installation documentation for specific installation and upgrade considerations.

Synchronizing Boot File for Service Function Cards

To synchronize the boot file for all the Service Function (SF) VPC-DI non-management cards, use the following:

CLI executable command:

```
[local] host_name# system synchronize boot
```

This assures that the changes in boot file are identically maintained across the SF cards.

Ensure that you execute this command before reload for version upgrade from any version less than mh14 to

mh14 or later.

Firmware Updates

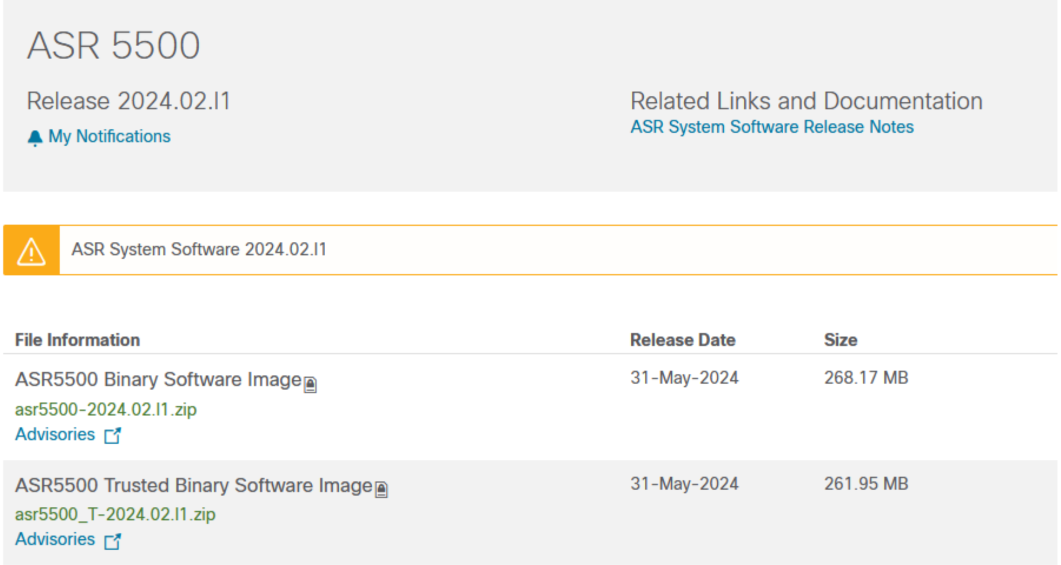
There are no firmware upgrades required for this release.

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 **Cisco.com Software Download Details**. Click **Linux,** and then choose the Software Image Release Version**.**

To find the checksum, hover the mouse pointer over the software image you have downloaded.



ASR 5500

Release 2024.02.I1

My Notifications

Related Links and Documentation

ASR System Software Release Notes

ASR System Software 2024.02.I1

File Information	Release Date	Size
ASR5500 Binary Software Image asr5500-2024.02.I1.zip Advisories	31-May-2024	268.17 MB
ASR5500 Trusted Binary Software Image asr5500_T-2024.02.I1.zip Advisories	31-May-2024	261.95 MB

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.

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 see Table 1

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 > certutil.exe -hashfile *<filename>.<extension>* SHA512
Apple MAC	Open a terminal window and type the following command $ shasum -a 512 *<filename>.<extension>*

Linux	Open a terminal window and type the following command
	$ sha512sum *<filename>.<extension>*
	Or
	$ shasum -a 512 *<filename>.<extension>*

NOTES: *<filename>* is the name of the file. *<extension>* 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

In 2024.01 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.

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 for this Release

The following table lists the open bugs in this specific 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 2 - Open Bugs in this Release

Bug ID	Headline	Product Found
CSCwj33154	sessmgr reload at uplane_sfw_create_nat_realm_info()	cups-up

Bug ID	Headline	Product Found
CSCwi52632	egtpu_process_update_req_evt()egtpu_handle_user_sap_event()sessmgr_uplane_gtpu_tx_update()	cups-up
CSCwj59047	Fatal Signal 6: Aborted PC: [f7f63062/X] ld-linux.so.2/_dl_sysinfo_int80()	cups-up
CSCwj24130	Inconsistency in counters in gtpu bulkstats for UP	cups-up
CSCwh03670	Downlink total fp packets not shown correctly in case of http out of order packet	cups-up
CSCwi91038	ePDG-VPC-DI-21.28.mh14.92736-Session loss and data loss observed post unplanned active SF reboot	epdg
CSCwk03546	Multiple AAAMGR are in warn state	epdg
CSCwk24742	MME sending ipv6 in notify request even when receiving dual ip addresses in create session response.	mme
CSCwj94159	The counters txbytes in bulkstats PORT schema reset before reaching to its maximum value.	pdn-gw
CSCwk04145	Rel 21.28.m14 (91474), TMO PL, Assertion failure at sess/smgr/sessmgr_fsm.c:5173	pdn-gw
CSCwk19513	sessmgr reload at sess/smgr/sessmgr_pgw.c:10009	pdn-gw
CSCwi88706	ADC detection accuracy is low for Telegram	pdn-gw
CSCwj17471	Planned srp switchover is succeeded though bgp monitor in stby upf is down	staros
CSCwj73773	Post unplanned MIO switchover all services failed to start and all contexts went into Initializing	staros
CSCwj67156	RTNETLINK socket recv buffer under run error code 105 on hermes branch sw build on CUPS CP	staros
CSCwi59036	Port redundancy Failed in 4-port deployment VPC SI	staros
CSCwj44441	CUPS upgrade failed to 21.28.mh14 release-all SF cards failed to boot	staros
CSCwk08792	BGP Routes Lost after Demux SF Restart	staros
CSCwj48267	EPDG fails to update the NAT change seen in data traffic following a NAT reboot	staros
CSCwd99519	Error logs seen on UPF PDR not found with PDR ID 0x149 and Remove PDR PDR with ID 0x2ce	upf

Resolved Bugs for this Release

The following table lists the resolved bugs 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 3 - Resolved Bugs in this Release

Bug ID	Headline	Product Found
CSCwj96506	The values of bearrespdeniedOtherCause decrease	cups-cp
CSCwk17262	CUPS CP suddenly stops processing Modify-Bearer-Req	cups-cp
CSCwi71670	X3 Lawful Intercept is marked as wrong EBI when using ipv6 session over dedicated bearer	cups-cp
CSCwi94768	Documentation to update the max entries supported in Gx local-policy-service	cups-cp
CSCwj99782	Sessmgr crashes on UP for function :: "sessmgr_check_if_static_urr_lc_set_exists" on CUPs-UPs	cups-up
CSCwj25382	UDP flows are not getting blocked when 0 quota is received from OCS	pdn-gw
CSCwk13311	PGW sends un-expected CCR-U to OCS server with quota exhaust as reporting reason	pdn-gw
CSCwj94378	Lawful Intercepts are not cleared for IMS calls	pdn-gw

Operator Notes

StarOS Version Numbering System

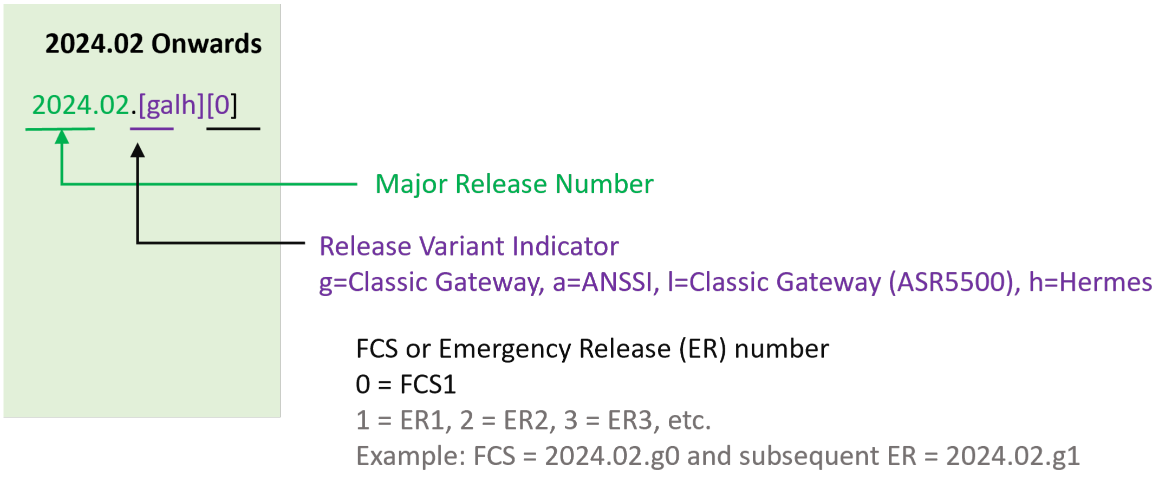
The output of the **show version** command displays detailed information about the version of StarOS currently running on the ASR 5500 or Cisco Virtualized Packet Core platform.

NOTE: Starting 2024.01.0 release (January 2024), Cisco is transitioning to a new release versioning scheme. The release version is based on the current year and product. Refer to **Figure** 1 for more details.

During the transition phase, some file names will reflect the new versioning whereas others will refer to the 21.28.x-based naming convention. With the next release, StarOS-related packages will be completely migrated to the new versioning scheme.

Version Numbering for FCS, Emergency, and Maintenance Releases

Figure 1 – Version Numbering



2024.02 Onwards

2024.02.[galh][0]

Major Release Number

Release Variant Indicator
g=Classic Gateway, a=ANSSI, l=Classic Gateway (ASR5500), h=Hermes

FCS or Emergency Release (ER) number
0 = FCS1
1 = ER1, 2 = ER2, 3 = ER3, etc.
Example: FCS = 2024.02.g0 and subsequent ER = 2024.02.g1

Release Package Descriptions

Table 4 provides descriptions for the packages that are available with this release. For more information about the release packages up to 21.28.x releases, refer to the corresponding releases of the release note.

Table 4 - Release Package Information

Software Package	Description
ASR 5500	
asr5500-<release>.zip	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	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	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.
VPC-DI	
qvpc-di-<release>.bin.zip	Contains the VPC-DI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-di_T-<release>.bin.zip	Contains the trusted VPC-DI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.s
qvpc-di-<release>.iso.zip	Contains 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.zip	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.
qvpc-di-template-vmware-<release>.zip	Contains the VPC-DI binary software image that is used to on-board the software directly into VMware.
qvpc-di-template-vmware_T-<release>.zip	Contains the trusted VPC-DI binary software image that is used to on-board the software directly into VMware.
qvpc-di-template-libvirt-kvm-<release>.zip	Contains the same VPC-DI ISO identified above and additional installation files for using it on KVM.
qvpc-di-template-libvirt-kvm_T-<release>.zip	Contains the same trusted VPC-DI ISO identified above and additional installation files for using it on KVM.
qvpc-di-<release>.qcow2.zip	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.
qvpc-di_T-<release>.qcow2.zip	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.
VPC-SI	
qvpc-si-<release>.bin.zip	Contains the VPC-SI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-si_T-<release>.bin.zip	Contains the trusted VPC-SI binary software image that is used to replace a previously deployed image on the flash disk in existing installations.
qvpc-si-<release>.iso.zip	Contains the VPC-SI ISO used for new deployments, a new virtual machine is manually created and configured to boot from a CD image.
qvpc-si_T-<release>.iso.zip	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.
qvpc-si-template-vmware-<release>.zip	Contains the VPC-SI binary software image that is used to on-board the software directly into VMware.
qvpc-si-template-vmware_T-<release>.zip	Contains the trusted VPC-SI binary software image that is used to on-board the software directly into VMware.
qvpc-si-template-libvirt-kvm-<release>.zip	Contains the same VPC-SI ISO identified above and additional installation files for using it on KVM.
qvpc-si-template-libvirt-kvm_T-<release>.zip	Contains the same trusted VPC-SI ISO identified above and additional installation files for using it on KVM.
qvpc-si-<release>.qcow2.zip	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.
qvpc-si_T-<release>.qcow2.zip	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.
VPC Companion Package	

companion-vpc-<release>.zip	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.
Ultra Services Platform	
usp-<version>.iso	The USP software package containing component RPMs (bundles). Refer to the Table 5 for descriptions of the specific bundles.
usp_T-<version>.iso	The USP software package containing component RPMs (bundles). This bundle contains trusted images. Refer to the Table 5 for descriptions of the specific bundles.
usp_rpm_verify_utils-<version>.tar	Contains information and utilities for verifying USP RPM integrity.

Table 5 - USP ISO Bundles

USP Bundle Name	Description
usp-em-bundle-<version>-1.x86_64.rpm*	The Element Manager (EM) Bundle RPM containing images and metadata for the Ultra Element Manager (UEM) module.
usp-ugp-bundle-<version>-1.x86_64.rpm*	The Ultra Gateway Platform (UGP) Bundle RPM containing images for Ultra Packet core (VPC-DI). There are trusted and non-trusted image variants of this bundle.
usp-yang-bundle-<version>-1.x86_64.rpm	The Yang Bundle RPM containing YANG data models including the VNFD and VNFR.
usp-uas-bundle-<version>-1.x86_64.rpm	The Ultra Automation Services Bundle RPM containing AutoVNF, Ultra Web Services (UWS), and other automation packages.
usp-auto-it-bundle-<version>-1.x86_64.rpm	The bundle containing the AutoIT packages required to deploy the UAS.
usp-vnfm-bundle-<version>-1.x86_64.rpm	The VNFM Bundle RPM containing an image and a boot-up script for ESC (Elastic Service Controller).
ultram-manager-<version>-1.x86_64.rpm*	This package contains the script and relevant files needed to deploy the Ultra M Manager Service.
* These bundles are also distributed separately from the ISO.	

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, refer to https://www.cisco.com/c/en/us/support/index.html.

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