



Release Notes for StarOS™ Software Version 21.17.6 and Ultra Service Platform Version N6.11.1

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Introduction

This Release Notes identify changes and issues related to this software release. This emergency release is based on USP release 6.11.0 and StarOS 21.17.5. This Release Notes is applicable to the ASR5500, VPC-SI, VPC-DI and Ultra Service platforms.

Release Package Version Information

Table 1 - Release Package Version Information

Software Packages	Version
StarOS packages	21.17.6 build 75734
Ultra Service Platform ISO	10859
usp-em-bundle*	6.11.0, Epoch: 70
usp-ugp-bundle*	21.17.6, Epoch: 8583
usp-yang-bundle	1.0.0, Epoch: 8030
usp-uas-bundle	6.10.0, Epoch: 8155
usp-auto-it-bundle	5.8.0, Epoch: 8254
usp-vnfm-bundle	4.5.0.112, Epoch: 8031
UltraM Manager	2.9.0, Epoch: 1418
* These bundles are also distributed separately from the ISO.	

Descriptions for the various packages provided with this release are located in [Table 3](#).

Feature and Behavior Changes

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:

- StarOS: <https://www.cisco.com/c/en/us/support/wireless/asr-5000-series/products-installation-and-configuration-guides-list.html>
- Ultra Gateway Platform (including the UltraM Solution): <https://www.cisco.com/c/en/us/support/wireless/ultra-gateway-platform/products-installation-and-configuration-guides-list.html>
- Ultra Automation Services: <https://www.cisco.com/c/en/us/support/wireless/ultra-automation-services/products-installation-and-configuration-guides-list.html>
- Virtual Packet Core (including VPC-SI and VPC-DI): <https://www.cisco.com/c/en/us/support/wireless/virtual-packet-core/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.

Ultra M Hyper-Converged Model Component Version Information

Table 2 - Ultra M Hyper-Converged Model Component Version Information

HW	SW	6.5	6.6	6.7	6.8	6.9	6.10	6.11.x
	StarOS	70741	71244	71540	72257	72729	73292	73955
	ESC	4.3.0.121	4.4.0.88	4.4.0.88	4.5.0.112	4.5.0.112	4.5.0.112	4.5.0.112
	RH Kernel	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	OSP	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: Open-Stack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.	10 or 13 NOTE: OpenStack Platform 13 with RHEL 7.5 is validated only for standalone AutoVNF-based deployments of the UGP VNF.

Installation and Upgrade Notes

HW	SW	6.5	6.6	6.7	6.8	6.9	6.10	6.11.x
UCS C240 M4S SFF (NFVI)	BIOS	3.0(4a)	3.0(4a)	3.0(4a)	3.0(4a)	3.0(4a)	3.0(4a)	3.0(4a)
	CIMC (BMC)	3.0(4d)	3.0(4d)	3.0(4d)	3.0(4d)	3.0(4d)	3.0(4d)	3.0(4d)
	MLOM	4.1 (3f)	4.1 (3f)	4.1 (3f)	4.1 (3f)	4.1 (3f)	4.1 (3f)	4.1 (3f)
C2960XR-48TD-I (Management)	Boot Loader	15.2(3r)E1	15.2(3r)E1	15.2(3r)E1	15.2(3r)E1	15.2(3r)E1	15.2(3r)E1	15.2(3r)E1
	IOS	15.2.(2)E5	15.2.(2)E5	15.2.(2)E5	15.2.(2)E5	15.2.(2)E5	15.2.(2)E5	15.2.(2)E5
C3850-48TS (Management)	Boot Loader	3.58	3.58	3.58	3.58	3.58	3.58	3.58
	IOS	03.06.06E	03.06.06E	03.06.06E	03.06.06E	03.06.06E	03.06.06E	03.06.06E
Nexus 93180-YC-EX (Leafs)	BIOS	7.59	7.59	7.59	7.59	7.59	7.59	7.59
	NX-OS	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)
Nexus 9236C (Spines)	BIOS	7.59	7.59	7.59	7.59	7.59	7.59	7.59
	NX-OS	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)	7.0(3)I7(3)

Firmware Updates

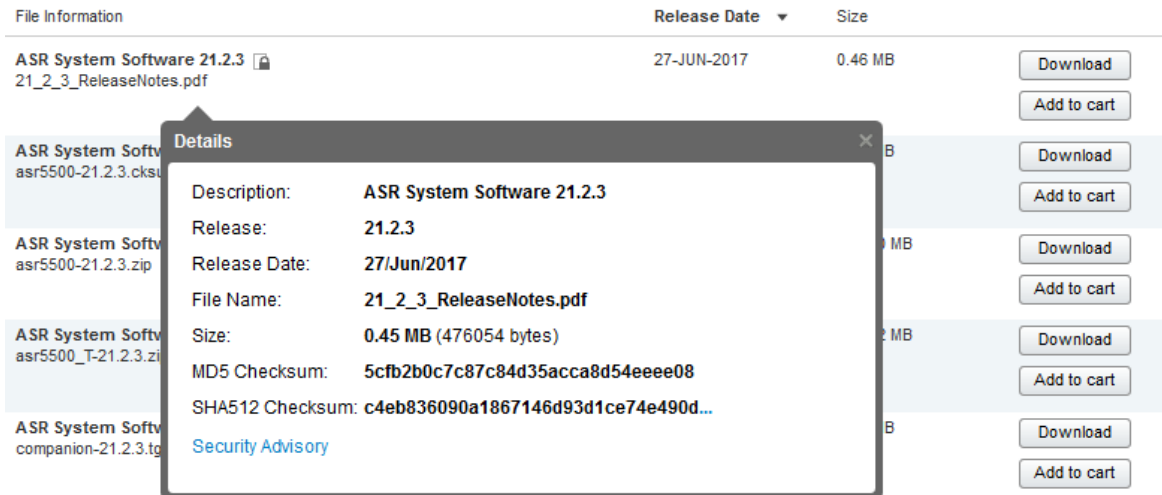
There are no firmware upgrades required for this release.

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

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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 3](#) 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 3](#).

Table 3 - 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>
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.

Open Bugs in this Release

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 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 4 - Open Bugs in this Release

Bug ID	Headline	Product Found*
CSCvr05520	[BP-CUPS] sessmgr 10699/ sgw 140014 error- Get Peer Profile Request failed/Failure dispatching event	cups-cp
CSCvt22956	"[sessmgr 12241 error] : Misc Error3: Clearing call : Sess Report Rsp received with , error code 69"	cups-up
CSCvr99784	audit-gtpmgr-failure recovery-invalid-crr-clp-uplane-call-info recovery-invalid-crr-clp-uplane-gtpu	cups-up
CSCvs29569	[TMO SOL] Gtpmgr is in over state due to over memory usage on SAEGW-UP	cups-up
CSCvs39245	ULI inside PGWCDR in case of GnGp handoff does not include SAI	pdn-gw
CSCvu27368	Unable to remove EDR ULI Hex Encoding from rulebase with no option	pdn-gw
CSCvr08929	sessmgr restart seen on mme_app_fill_delete_sess_req	mme
CSCvs24495	sessmgr restarts at function egtpc_send_req_msg()	mme
CSCvp05787	sessmgr restart seen with function egtpc_handle_del_bearer_cmd_req_evt()	sgsn
CSCvs17393	Multiple Instances of sessmgr restart observed in egtpc_get_ebi_info_from_pdu()	sgsn
CSCvs18939	Multiple Instances of sessmgr restart observed in sgsn_app_allocate_svc_req_cb()	sgsn
* 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](#).

Resolved Bugs in this Release

Table 5 - Resolved Bugs in this Release

Bug ID	Headline	Product Found*
CSCvt53147	[TMO] CUPS GGSN show sub ggsn-only does not show GGSN IP	cups-cp
CSCvt26834	21s new call impact with vpnmgr on SGI context restart on demux SF	cups-cp
CSCvt48909	vpnmgr failed due to Fatal Signal at vpn_deregister_user_plane	cups-cp
CSCvt03103	[BP-CUPS] Series of sessmgr reload at function sm restart at sx_handle_user_sap_event	cups-cp
CSCvt28977	[CUPS] Assertion failure at egtpc_handle_user_sap_event	cups-cp
CSCvt07355	Sessmgr restart at smgr_sgw_allocate_trans_info() during DDN ACK processing	cups-cp
CSCvt30213	SM failed due to Assertion failure at smgr_callline_fsm	cups-cp
CSCvs88301	[PLT-CUPS]: The control recovery time goes upto 24-26 Secs with 150K subs	cups-up
CSCvs30808	[BP-CUPS] calls disconnected with reason graceful-cleanup-on-audit-fail after srp switchover	cups-up
CSCvt63478	vpp restart mgr failed on sn_assert_signal_handler	cups-up
CSCvt19282	[PLT-CUPS]: VPNMGR task restarts on multiple back to back switch-overs in N:M model	cups-up
CSCvt11057	"[BP-CUPS]: [p2p 146002 error] P2P: P2P Plugin Not Loaded in sessmgr, fail to detect p2p traffic"	cups-up
CSCvt32883	"No ruledef and PFD_MGMT_Request get succeeds only in 1st UP, but failure in rest UPs with Call fail"	cups-up
CSCvt10853	Enh: Need new CLI to select ULI encoding format (hex/dec) inside EDR	pdn-gw
CSCvk54439	MME doesn't send ESM Notification for IMS session re-establishment	mme
CSCvs36965	[21.5.23] [ASR5000] [MME/SGSN] SRVCC Cancellation - missing NAS Notification with new TAU Request	mme
CSCvs56074	Unexpected LTE Attach/TAU: Old UE Context still released with "NAS Unspecified"	mme
CSCvr18094	Sessmgr restart when handling extended PCO during create bearer response	mme
CSCvr34106	Assertion Failure for aaamgr_sred occurring frequently	mme
CSCvt17660	ERAB Modification failed with "Semantic error" during collision with PDN Connectivity request proc	mme
CSCvt20542	sessmgr restarted on MME: mme_app_fill_update_bearer_rsp	mme
CSCvs05694	MME/SGSN 21.11.5 (72339) - CLI "sgsn clear-detached-subscriptions imsi"; Broken	sgsn
CSCvs19455	SGSN shows NSE still AVAILABLE even after SN_DELETE from BSC	sgsn

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Bug ID	Headline	Product Found*
CSCvs73366	Copy the SAPI value from Forward Relocation Request to Context Response	sgsn
CSCvt40783	SGSN is ignoring GTPv2 Forward relocation request from MME	sgsn
CSCvu14171	memif between vpp - sxdemux fails to handle 4K+ size pkt resulting in sx pkt burst	staros
CSCvt38881	Staros VPC-DI - virsh serial0 console logs stops sending debug console output after reboot	staros
CSCvt30501	Potential memory leak issue at function sessmgr_uplane_alloc_simple_buffer for TCP OOO	upf
CSCvs89865	In the Pm Report mgmt port and service port both should be visible for Network rx and Network tx	usp-usf
CSCvs28032	EM build sometimes fails at 'virt-customize' command	usp-usf
CSCvs97620	Out of memory issue occurred while PM job report generation after 12 hours.	usp-usf
* Information in the "Product Found" column identifies the product in which the bug was initially identified.		

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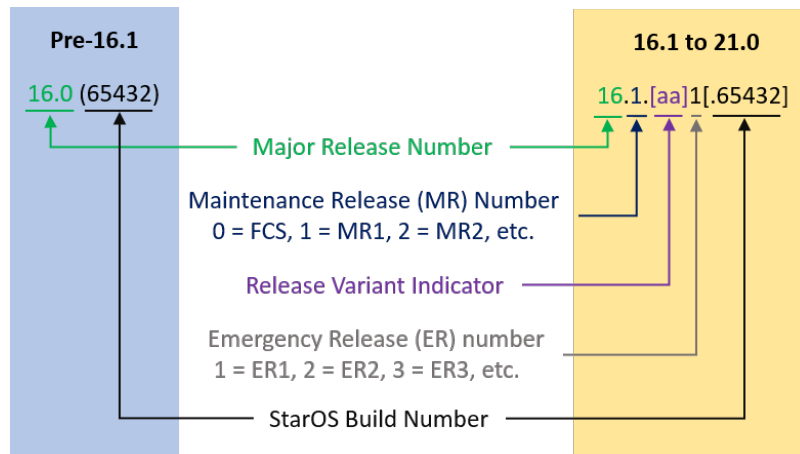
StarOS Version Numbering System

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.

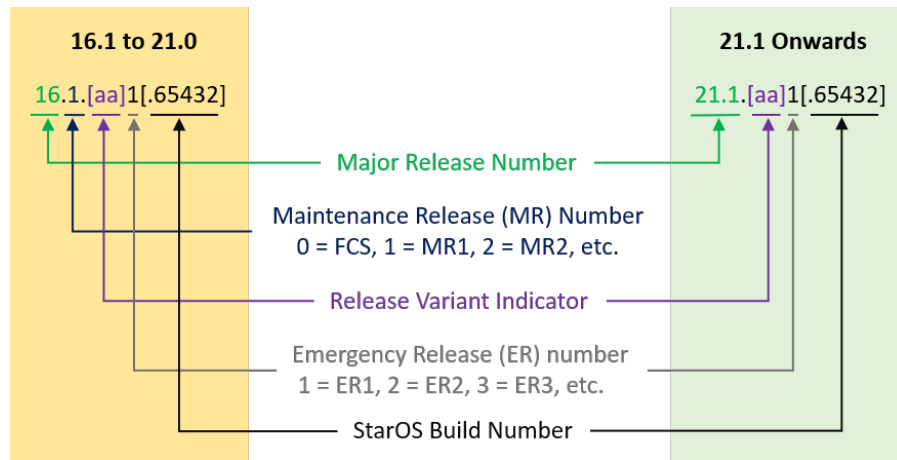
From release 16.1 onwards, the output of the **show version** command, as well as the terminology used to describe the Build Version Number fields, has changed. Additionally, **show version** will display slightly different information depending on whether or not a build is suitable for deployment.

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".



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

Table 6 - 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		

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In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
qvpc-di- <release>.bin.zip	qvpc-di- <release>.bin	<p>Contains the 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>
qvpc-di_T- <release>.bin.zip	qvpc-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>
qvpc-di- <release>.iso.zip	qvpc-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>
qvpc-di_T- <release>.iso.zip	qvpc-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>
qvpc-di-template- vmware- <release>.zip	qvpc-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>
qvpc-di-template- vmware_T- <release>.zip	qvpc-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>

In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
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>
qvmc-di_T-<release>.qcow2.zip	qvmc-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		
qvmc-si-<release>.bin.zip	qvmc-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>
qvmc-si_T-<release>.bin.zip	qvmc-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>

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In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
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>
qvpc-si-template- libvirt-kvm_T- <release>.zip	qvpc-si-template- libvirt-kvm_T- <release>.tgz	<p>Contains the same trusted 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>

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In 21.12.0 and later Releases	In pre-21.12.0 Releases	Description
qvpc-si- <release>.qcow2.zip	qvpc-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.
qvpc-si_T- <release>.qcow2.zip	qvpc-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.
Ultra Service Platform		
usp-<version>.iso		The USP software package containing component RPMs (bundles). Refer to Table 7 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 Table 7 for descriptions of the specific bundles.
usp_rpm_verify_utils-<version>.tar		Contains information and utilities for verifying USP RPM integrity.

Table 7 - 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.

Obtaining Documentation and Submitting a Service Request

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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