



Release Notes for the Ultra Cloud Core User Plane Function

Version 2022.01.4

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Introduction

This Release Notes identifies changes and issues related to this software release.

Release Lifecycle Milestones

Release Lifecycle Milestone	Milestone	Date
First Customer Ship	FCS	9-Feb-2022
End of Life	EoL	9-Feb-2022
End of Software Maintenance	EoSM	10-Aug-2023
End of Vulnerability and Security Support	EoVSS	10-Aug-2023
Last Date of Support	LDoS	31-Aug-2024

These milestones and the intervals between them are defined in the [Cisco Ultra Cloud Core \(UCC\) Software Release Lifecycle Product Bulletin](#) available on cisco.com.

Release Package Version Information

Software Packages	Version
companion-vpc-21.26.11.86958.SPA.tgz	21.26.11.86958
qvpc-si-21.26.11.86958.qcow2.SPA.tgz	21.26.11.86958
qvpc-si-21.26.11.86958.SPA.tgz	21.26.11.86958
qvpc-si_T-21.26.11.86958.qcow2.SPA.tgz	21.26.11.86958
qvpc-si_T-21.26.11.86958.SPA.tgz	21.26.11.86958

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

Verified Compatibility

Products	Version
ADC Plugin	2.69.0.1534
RCM	2022.01.2
Ultra Cloud Core SMI	2020.02.2.3.10
Ultra Cloud Core SMF	ccg.2021.02.3.t4

Related Documentation

For a complete list of documentation available for this release, go to: <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-user-plane-function/series.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.

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.

The screenshot shows a 'Details' popup window on the left and a table of software images on the right. The popup contains the following information:

- Description : UPF VPC-SI binary software image signature package
- Release : 3099.01.0
- Release Date : 29-Jan-2020
- FileName : upf.3099.01.0.SPA.tgz
- Size : 169.69 MB (177935223 bytes)
- MD5 Checksum : 644adad53e397f7657f493e576bcd338

The table on the right is titled 'Related Links and Documentation' and contains the following data:

	Release Date	Size	
UPF VPC-SI binary software image signature package upf.3099.01.0.SPA.tgz	29-Jan-2020	169.69 MB	↓
UPF trusted VPC-SI binary software image signature package upf_T.3099.01.0.SPA.tgz	29-Jan-2020	164.05 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 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 > 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.

MD5 Checksum Details

Software Packages	MD5 Checksum
companion-vpc-21.26.11.86958.SPA.tgz	SHA512: 5646e95cce40226286a7c0b6297330caf5feb7e1ead26cc54fa95319c23ae23b06da5eae836e37196f15ecf2e73f5420d9d831637b3899afd5558f4d346736c MD5: d1e65886eab3b1cc51f545453465c2cf
qvpc-si-21.26.11.qcow2.zip.SPA.tar.gz	SHA512: db8134c5271681fa2f2cbd4281f27c8994ff8d1692d7d9d97b30a2d7c0a61e031564a53b9a13bcc69116e1cd8b979688a3f3ed5de9916627ccb90afab21c268d MD5: 439bc69f907d3c61763b639c55b883d0
qvpc-si-21.26.11.bin.SPA.tar.gz	SHA512: 2dce5e46aa69ec5e21fb3d771854b69b1a1af1cef399a968491fc5518694991e01d6f3ad8454088e9e9c17d2179a509b40abe45cb5e5435396f11e699669396a MD5: 2cd3fbad4953ad0a202b2c0a34f4365b

qvpc-si_T-21.26.11.qcow2.zip.SPA.tar.gz	SHA512: 5a6d07158a92652e25dd8e60a25b521666186c8ced276d196d4dae4194b57d5e64d5f01562f43d3cf83735e2474ff75b3c467f50de714df13d5bba5e2ee2b6af MD5: 2edf77accf26f28fd4b71bc0cdd6237
qvpc-si_T-21.26.11.bin.SPA.tar.gz	SHA512: cb942cde6e116815ad381a1d2260a8b77a4babd55eb78b26359b4745b150bb364559be91d44d1f464ce6f30504c69d43066637e42ee9d803b605d07f2fdeca95 MD5: a7fed9a6201bcea9645622913bb7f304

Certificate Validation

UPF 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.

Open Bugs for this Release

None for this release.

Resolved Bugs for this Release

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

Bug ID	Headline
CSCwd05061	EDNS readdress is not working

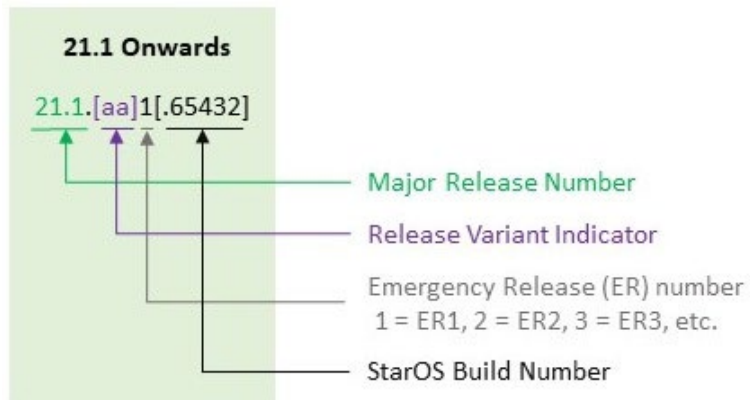
NOTE: This software release may contain bug fixes first introduced in other releases. Additional information for all resolved bugs for this release are available in the [Cisco Bug Search Tool](#).

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.

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



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 facilitates identifying the changes between releases when using Bug Search Tool to research software releases.

NOTE: The 5G UPF software is based on StarOS and implements the version numbering system described in this section. However, as a 5G network function (NF), it is posted to Cisco.com under the Cloud Native Product Numbering System as described in [Cloud Native Product Version Numbering System](#).

Cloud Native Product Version Numbering System

Versioning: Format & Field Description

YYYY.RN.MN[.TTN] [.dN] [.MR][.iBN]

Where,

YYYY → 4 Digit year.

- Mandatory Field
- Starts with 2020.
- Incremented after the last planned release of year.

RN → Major Release Number.

- Mandatory Field
- Starts with 1.
- Support preceding 0.
- Reset to 1 after the last planned release of a year(YYYY)

MN → Maintenance Number.

- Mandatory Field
- Starts with 0.
- Does not support preceding 0.
- Reset to 0 at the beginning of every major release for that release.
- Incremented for every maintenance release.
- Preceded by 'm' for builds from main branch.

TTN → Throttle of Throttle Number.

- Optional Field, Starts with 1.
- Precedes with "t" which represents the word "throttle of throttle".
- Applicable only in "Throttle of Throttle" cases.
- Reset to 1 at the beginning of every major release for that release.

DN → DEV branch Number.

- Same as TTN, except Used for DEV branches
- Precedes with "d" which represents "dev branch".

MR → Major Release for TOT and DEV branches

- Only applicable for TOT and DEV Branches:
- Starts with 0 for every new TOT and DEV branch .

BN → Build Number

- Optional Field, Starts with 1.
- Precedes with "i" which represents the word "interim".
- Does not support preceding 0.
- Reset at the beginning of every major release for that release
- Reset for every throttle of throttle.

Release Package Descriptions

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

Table 2 - Release Package Information

Software Packages	Description
companion-vpc-<staros_version>.zip.SPA.tar.gz	Contains files pertaining to VPC, including SNMP MIBs, RADIUS dictionaries, ORBEM clients, etc. These files pertain to both trusted and non-trusted build variants. The VPC companion package also includes the release signature file, a verification script, the x.509 certificate, and a README file containing information on how to use the script to validate the certificate.
qvpc-si-<staros_version>.bin.SPA.tar.gz	The UPF release signature package. This package contains the VPC-SI deployment software for the UPF as well as the release signature, certificate, and verification information. Files within this package are nested under a top-level folder pertaining to the corresponding StarOS build.
qvpc-si-<staros_version>.qcow2.zip.SPA.tar.gz	The UPF release signature package. This package contains the VPC-SI deployment software for the UPF as well as the release signature, certificate, and verification information. Files within this package are nested under a top-level folder pertaining to the corresponding StarOS build.

Obtaining Documentation and Submitting a Service Request

Software Packages	Description
qvpc-si_T-<staros_version>.bin.SPA.tar.gz	<p>The trusted UPF release signature package. This package contains the VPC-SI deployment software for the UPF as well as the release, signature, certificate, and verification information.</p> <p>Files within this package are nested under a top-level folder pertaining to the corresponding StarOS build.</p>
qvpc-si_T-<staros_version>.qcow2.zip.SPA.tar.gz	<p>The trusted UPF release signature package. This package contains the VPC-SI deployment software for the UPF as well as the release, signature, certificate, and verification information.</p> <p>Files within this package are nested under a top-level folder pertaining to the corresponding StarOS build.</p>

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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