



# Release Notes for the Ultra Cloud Core User Plane Function

## Version 2021.02.0

**First Published:** May 31, 2021

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### Introduction

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

### Release Package Version Information

Software Packages	Version
qvpc-si-21.22.ua1.bin.SPA.tar.gz	21.22.ua1
qvpc-si-21.22.ua1.qcow2.zip.SPA.tar.gz	21.22.ua1
qvpc-si_T-21.22.ua1.bin.SPA.tar.gz	21.22.ua1
qvpc-si_T-21.22.ua1.qcow2.zip.SPA.tar.gz	21.22.ua1

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

### Verified Compatibility

Products	Version
RCM	rcm.2021.02.0.i17
SMI	2020.02.2.25
SMF	ccg.2021.02.0.i260

### Recommended BIOS Settings

The following table provides the recommended BIOS settings for UPF.

Setup Parameters	Preferred Value
cpuPerformance	Enterprise

Recommended BIOS Settings

Setup Parameters	Preferred Value
cpuEnergyPerformance	Performance
hwpmEnable	HWPM Native Mode
eppProfile	Performance
enhancedIntelSpeedStepTech	Disabled
executeDisableBit	Enabled
intelHyperThreadingTech	Enabled (for Data-UPF) Disabled (for IMS-UPF)
intelTurboBoostTech	Disabled
intelVtForDirectedIo	Enabled
ktiPrefetch	Enabled
numaOptimized	Enabled
packageCstateLimit	C0 C1 State
patrolScrub	Disabled
processorC1e	Disabled
processorC6report	Disabled
pwrPerfTuning	BIOS
snc	Disabled
usbPortInternal	Disabled
usbPortKvm	Enabled
usbPortRear	Disabled
usbPortSdCard	Disabled
workLoadConfig	I/O Sensitive
xptPrefetch	Enabled
llcPrefetch	Disabled

**NOTE:** The following setup parameters are disabled by default. To achieve higher throughput for Data-UPF, enable the setup parameters:

- enhancedIntelSpeedStepTech: Enabled
- intelTurboBoostTech: Enabled

- IlcPrefetch: Enabled

To configure BIOS by using host profiles on Cisco UCS servers, refer to the *SMI Cluster Manager Operations* chapter in the *UCC SMI Operations Guide*.

## 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>

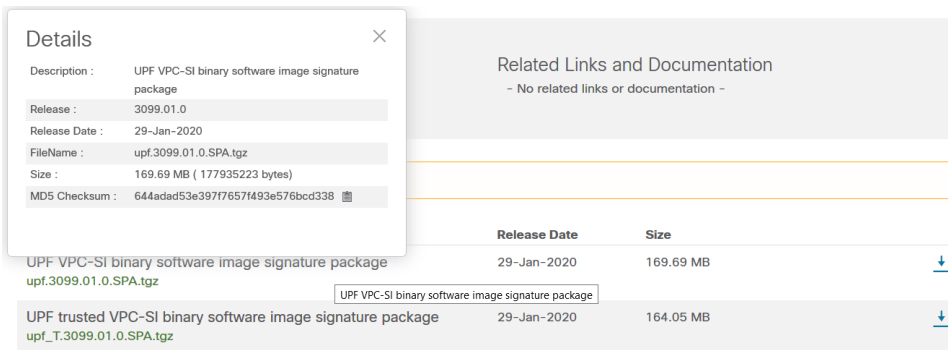
## Installation and Upgrade Notes

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.



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

Operating System	SHA512 checksum calculation command examples
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>
<b>NOTES:</b>  <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
qvpc-si-21.22.ua1.bin.SPA.tar.gz	f19d0c184b915af54d87ce3e306174e8
qvpc-si-21.22.ua1.qcow2.zip.SPA.tar.gz	af9dbaef397557af3f68cc132d19c10c
qvpc-si_T-21.22.ua1.bin.SPA.tar.gz	83dfb1b189c47d73313ce9ead201430e
qvpc-si_T-21.22.ua1.qcow2.zip.SPA.tar.gz	ac86ecc598b4df3caaf9c5126fa63125

## 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

The following table lists the known bugs that were found in this software release and which remain open.

**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](#).

Resolved Bugs for this Release

Bug ID	Headline	Product
<a href="#">CSCvw48604</a>	[UPF-SVI] Active UPF is losing IP Chunks allocated by SMF after ICSR Switchover but recovering later	UPF
<a href="#">CSCvw58960</a>	Sessmgr restarts at egtpu_process_tx_setup_req_evt()	UPF
<a href="#">CSCvw74614</a>	[Combo-UPF]: Peer ID is not displayed correctly in show sx peers cli	UPF
<a href="#">CSCvy50485</a>	[SVI-UPF]: vpp restarts at sn_assert_signal_handler()	UPF

## Resolved Bugs for 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](#).

Bug ID	Headline	Product	Behavior Change
<a href="#">CSCvt30501</a>	Potential memory leak issue at function sessmgr_uplane_alloc_simple_buffer for TCP OOO	UPF	No
<a href="#">CSCvu08963</a>	[UPF-SVI]:multiple restarts@Function:sessmgr_uplane_process_sx_sess_modify_create_rulebase_pdr()	UPF	No
<a href="#">CSCvu21615</a>	Fatal signal at uplane_handle_itc_processing() after push config from CP	UPF	No
<a href="#">CSCvu57146</a>	UPF Dropping Data received on default flow after 4g to 5g idle mode	UPF	No
<a href="#">CSCvu58018</a>	UPF is holding IP chunks, resulting in more number of chunks in UPFs	UPF	No
<a href="#">CSCvu62892</a>	[UPF]: IP pool chunks not released on UPF when path-failure detected in \"releasing\" state	UPF	No
<a href="#">CSCvu96441</a>	[UPF-SVI]: Segmentation fault at acsmgr_process_show_cf_stats() during call model run	UPF	No
<a href="#">CSCvu99351</a>	SGW-UP going down leading to outage	UPF	No
<a href="#">CSCvv61902</a>	[SVI-UPF] VPP crash observed followed by continuous smgr resets.	UPF	No
<a href="#">CSCvw15307</a>	Sessmgr restart sessmgr_uplane_match_rule_after_cf	UPF	No
<a href="#">CSCvw39909</a>	UPF sending incorrect Time Reporting in Sx_Modification Response in Query URR case.	UPF	No
<a href="#">CSCvw83244</a>	Uplink packet drops after 4g ->3G handover on CUPS UP with this error: ADF UL TEID/QFI key mismatch	UPF	No
<a href="#">CSCvx02862</a>	[Combo-UPF]5G-4G handover , UE goes to Idle, D/L data , debuffering, after that all pkts to sessmgr.	UPF	No

Operator Notes

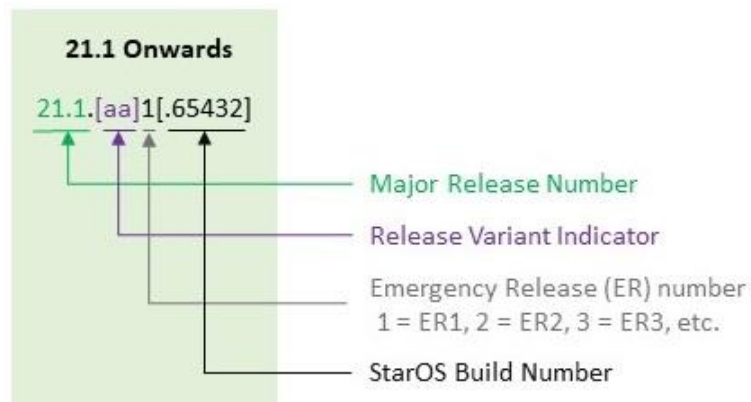
Bug ID	Headline	Product	Behavior Change
<a href="#">CSCvx08150</a>	[UPF-SVI] Assertion at sn_memblock_memcache_alloc() while 5G call-model was running	UPF	No
<a href="#">CSCvx13009</a>	In CUPS nodes IMS subs facing one way audio , intermittently	UPF	No
<a href="#">CSCvx14614</a>	[Combo-UPF]Per peer statistics are incorrect for combo calls, in multi smf topology.	UPF	No
<a href="#">CSCvx38146</a>	[UPF]:Incosistent behaviour for Change in content-ID not updating TEP row	UPF	No
<a href="#">CSCvx61691</a>	[UPF-SVI] :sessmgr restart at sessmgr_uplane_free_p2p_session()	UPF	No
<a href="#">CSCvx62133</a>	[UPF-SVI] sessmgr restart at sessmgr_uplane_process_sx_sess_modify_request()	UPF	No
<a href="#">CSCvx83812</a>	Sessmgr restart on standby UP @smgr_uplane_handle_load_optbldb()	UPF	No
<a href="#">CSCvx92756</a>	[UPF-SVI]: Sessmgr restarted at uplane_drv_handle_events_from_smgr()	UPF	No
<a href="#">CSCvy16147</a>	[UPF]Incorrect tos being marked for combo UPF, when charging action has tos and sgw marks inner pkt.	UPF	No
<a href="#">CSCvy18530</a>	UPF : UL ICMP packet is buffered even when UL FAR Action is forward	UPF	No

## 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".



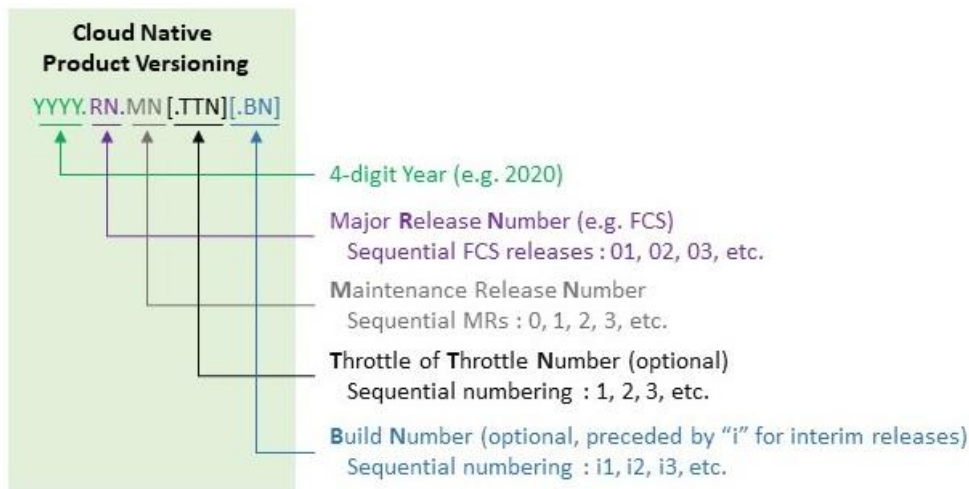
Operator Notes

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

Though the packages that comprise the UPF use the StarOS version numbering system as described in the previous section, the UPF product leverages the cloud native version numbering system described below.



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.

## Release Package Descriptions

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

**Table 2 - Release Package Information**

Software Packages	Description
upf.<version>.SPA.tgz	<p>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.</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

Software Packages	Description
upf_T.<version>.SPA.tgz	<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>.



## Obtaining Documentation and Submitting a Service Request

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