



Release Notes for the 5G Converged Core (SMF and cnSGW) Version 2023.04.5

First Published: 2024-03-20

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	31-Oct-2023
End of Life	EoL	31-Oct-2023
End of Software Maintenance	EoSM	30-Apr-2025
End of Vulnerability and Security Support	EoVSS	30-Apr-2025
Last Date of Support	LDoS	30-Apr-2026

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
ccg-2023.04.5.SPA.tgz	2023.04.5
NED package	ncs-5.6.8-ccg-nc-2023.04.5 ncs-6.1-ccg-nc-2023.04.5
NSO	5.6.8 6.1.3

Descriptions for the various packages provided with this release are available in the [Release Package Descriptions, on page 6](#) section.

Verified Compatibility

Products	Version
Ultra Cloud Core SMI	2023.04.1
Ultra Cloud CDL	1.11.5
Ultra Cloud Core UPF	2023.04.0
Ultra Cloud cnSGWc	2023.04.5

For information on the Ultra Cloud Core products, refer to the documents for this release available at:

- <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-subscriber-microservices-infrastructure/products-installation-and-configuration-guides-list.html>
- <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-user-plane-function/products-installation-and-configuration-guides-list.html>
- <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-serving-gateway-function/products-installation-and-configuration-guides-list.html>

Behavior Changes for this Release

The following behavior changes are visible in this release.

Handling Peer Delete Log during Reload

Previous Behavior: The application error log was captured even if the ETCD entry was deleted for a valid scenario.

Following is an example of error log where this log is marked as ERROR.

```
2024/03/08 06:22:38.700 smf-service-6 [ERROR] [MemoryCache.go:446] [infra.memory_cache.core] Reload cache, key C.GR.1.peergtpnodeinfo1.x.x.x.x deleted
```

New Behavior: The log level of this error log is changed to debug as this log is getting printed in the valid scenario.

Modification in Echo Timer Handling

Previous Behavior: When the SMF received echo request from peer, it reset the local echo request timer, resulting in delayed transmission of echo requests.

New Behavior: For SGW roaming peers, with an echo interval configured at 300 seconds, the SMF now sends echo requests at irregular intervals ranging from 240 to 270 seconds.

The SMF sends these echo requests even if there are incoming GTPv2 messages, including peer echo requests, from SGW.

SGW Peer Detection in Roaming Scenario

Previous Behavior: Roaming S-GW peers were showing as UNKNOWN_PEER in nodemgr logs and not tagged as "Roaming" in the SMF CCG software release 2023.03.m0.d8.0.i45 when seen with **show peers all** command.

New Behavior: Roaming S-GW peers are tagged as "Roaming" when seen with **show peers all** command.

Related Documentation

For the complete list of documentation available for this release, see <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-session-management-function/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.

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.

Release Date	Size
02-Aug-2023	2952.10 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: Checksum Calculations per Operating System](#) and verify that it matches either the one provided on the software download page.

To calculate a SHA512 checksum on your local desktop, refer to 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> OR <pre>\$ shasum -a 512 filename.extension</pre>
Note filename is the name of the file. extension is the file extension (for example, .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

SMF 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 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](#).

Bug ID	Headline
CSCwj36575	SMF echo interval configuration reset during upgrade
CSCwj41844	Observing echo request sent randomly from OBR SMF

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 is available in the [Cisco Bug Search Tool](#).

Bug ID	Headline	Behavior Change
CSCwj27775	High count of etcd DELETE/PUT operations observed when roaming peer sends MBR with RC IE	No
CSCwi19577	Frequent Reload cache peerInfo deleted errors in OAM logs	Yes
CSCwj19242	s11-gtpc-ep2-2 is unable to communicate to cache_pod_1 - error [RPCNoRemoteHostAvailable] Selected	No
CSCwj21675	During incoming DSR and ongoing WIFI to LTE HO, SMF deletes all the PDRs.	No
CSCwj28003	Abort HO not triggered : incoming DSR and onging WIFI to LTE HO await CBRes	No

Operator Notes

Cloud Native Product Version Numbering System

The show helm list command displays detailed information about the version of the cloud native product currently deployed.

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 bulbs from main branch.

TTN → Throttle of Throttle Number.

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

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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

The following table provides descriptions for the packages that are available with this release.

Table 2: Release Package Information

Software Packages	Description
ccg.<version>.SPA.tgz	The SMF offline release signature package. This package contains the SMF deployment software, NED package, as well as the release signature, certificate, and verification information.
ncs-<nso_version>-ccg-nc-<version>.tar.gz	The NETCONF NED package. This package includes all the yang files that are used for NF configuration. Note that NSO is used for the NED file creation.

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>.