



# Release Notes for the 5G Converged Core (SMF and cnSGW) Version 2023.04.3

First Published: 2024-02-15

## 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-2023.04.3.SPA.tgz	2023.04.3
NED package	ncs-5.6.8-ccg-nc-2023.04.3 ncs-6.1-ccg-nc-2023.04.3
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	2023.04.3

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 change is visible in this release.

### Simultaneous Clearing of Subscribers Associated to Different UPFs

#### Old Behavior:

Clearing of subscribers associated to a single UPF was supported.

Any new clear subscriber command initiated during an ongoing clear subscriber operation used to get blocked irrespective of the GR instance ID.

There was no provision to display the estimated time for the completion of clear subscriber operation.

#### New Behavior:

SMF can simultaneously clear subscribers associated to any of the UPFs provided through the **clear subscriber upf-list** command, with a maximum limit of 20 UPFs.

The clear subscriber operation with **upf-list** option is successful irrespective of the presence of **nf-service** in the command syntax. In such scenarios, it clears the matching subscribers for both SMF and cnSGW-C.

SMF does not block the clear subscriber operation unless another clear subscriber command is initiated on the same GR instance ID.




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**Note** The GR instance must be in PRIMARY role for the command to take its effect.

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SMF displays the wait time to clear the UPF subscribers as part of the **clear subscriber** command output.

## 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>.

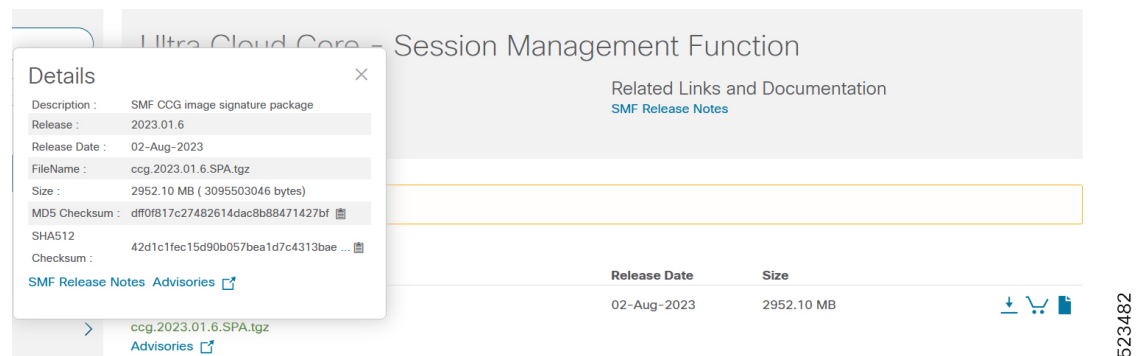
## Installation and Upgrade Notes

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.



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	<p>Open a command line window and type the following command:</p> <pre>&gt; certutil.exe -hashfile filename.extension SHA512</pre>

Operating System	SHA512 checksum calculation command examples
Apple MAC	Open a terminal window and type the following command:  \$ <code>shasum -a 512 filename.extension</code>
Linux	Open a terminal window and type the following command:  \$ <code>sha512sum filename.extension</code>  OR  \$ <code>shasum -a 512 filename.extension</code>
<b>Note</b>	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

There are no open bugs in this release.

## 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
<a href="#">CSCwi33899</a>	Support of clearing the subscriber for multiple UPF simultaneously, through CLI	Yes
<a href="#">CSCwi31799</a>	Online CHF down - with NRF discovery enabled, SMF not falling back to locally configured IP	No

Bug ID	Headline	Behavior Change
<a href="#">CSCwi16563</a>	SMF does not remove the PDR for 5g-4g HO collision with IM exit	No
<a href="#">CSCwi00319</a>	Multiple remove FAR with FUA-T and quota exhaust resulting in N4 MOD Cause 69	No
<a href="#">CSCwi07718</a>	SMF to suppress v6 tunnel information in OHC FAR when UPF is v4	No
<a href="#">CSCwh97986</a>	SMF - no radius ACCT when only online chf available and is down	No
<a href="#">CSCwi36011</a>	SMF should support QoS rules and QoS description with the length of two octets Option in PCO IE	No
<a href="#">CSCwi00263</a>	Ancient_Cache_Pod excludes pod affinity Once affinity stream connection flap multiple times	No
<a href="#">CSCwi67146</a>	SMF - Fallback incase of UPF blocked to different precedence not working.	No
<a href="#">CSCwh53948</a>	SGW_POD Restart after DIMM error causing IPC Streams failed on gtpc-ep1 streams to sgw-Service	No
<a href="#">CSCwh54943</a>	EPSFB IDLE-DLDR - NRF discovery empty AMF instance seen.	No
<a href="#">CSCwh66800</a>	SMF-Service pod crash with Panic Message during WIFI to NR HO – MsgPduSessionReleaseRequest	No
<a href="#">CSCwh53385</a>	RS not replied during WLAN to 4G HO with active voice-call	No
<a href="#">CSCwi93769</a>	sgw-service pod panic on receiving CBRes with ULI change - GetBearerFromCreateBearerProcInfo	No
<a href="#">CSCwi30866</a>	SMF is not sending ULI info in N40 update/Rel after Idle/Active transition	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>.