



# Release Notes for the Ultra Cloud Core Policy Control Function Version 2023.04.0

First Published: 2023-10-17

## Ultra Cloud Core Policy Control Function

### 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
pcf.2023.04.0	2023.04.0
NED Package	ncs-6.1-pcf-nc-2023.04.0
NSO Version	6.1

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

## Verified Compatibility

Products	Version
Ultra Cloud Core SMI	2023.04.1
Ultra Cloud Core CDL	1.11.5

## What's New in this Release

### New in Documentation

This version of Release Notes includes a new section titled **What's New in this Release** comprising all new features, enhancements, and behavior changes applicable for the release.

This section will be available in all the 5G release notes and will supersede content in the Release Change Reference (RCR) document. Effective release 2024.01, the RCR document will be deprecated.

### Features and Enhancements

This section covers a brief description of the features and enhancements introduced in this release. It also includes links to detailed documentation, where available.

Feature	Description
<a href="#">Addition of CDL Utility to PCF Software Image</a>	PCF supports the <code>pcf-utilities</code> pod to retain the CDL utility scripts on master nodes post force VM redeploy from Cluster Manager. <b>Default Setting:</b> Enabled – Always-on
<a href="#">Enhancement to Cluster Load Information in Heartbeat</a>	PCF updates the time stamp information using the <code>loadTimeStamp</code> attribute while sending the cluster load information in heartbeat. <b>Default Setting:</b> Disabled – Configuration required to enable
<a href="#">Enhancement to online and offline charging over N7 to SMF</a>	PCF does not support the simultaneous online and offline charging while sending the CHF address to SMF over the N7 interface. <b>Default Setting:</b> Disabled - Configuration required to enable
<a href="#">NF Set and NF Service Set</a>	PCF supports the configuration of NF Set and NF Service Set feature by using the <code>Set ID</code> attribute in <code>service-registration</code> CLI commands. <b>Default Setting:</b> Disabled – Configuration required to enable
<a href="#">URSP Support in PCF</a>	PCF offers UE Route Selection Policy or URSP support for the UE to determine the routing of outgoing traffic. <b>Default Setting:</b> Enabled – Always-on

### Behavior Changes

None in this release.

## Related Documentation

For the complete list of documentation available for this release, go to <https://www.cisco.com/c/en/us/support/wireless/ultra-cloud-core-policy-control-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.



**Note** ETCD v3.5.x does not support in-service downgrade to 3.4.x. If you are downgrading from 2023.04.0 builds to previous releases, perform system mode shutdown before downgrade.

## 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.

**Details**

- Description : PCF offline signature package
- Release : 2023.03.0
- Release Date : 25-Jul-2023
- FileName : pcf.2023.03.0.SPA.tgz
- Size : 3904.95 MB ( 4094632015 bytes)
- MD5 Checksum : 2779f419ae07781f5f371854b378e54d
- SHA512 Checksum : 698f646f8931d00c1a88506c087fc079 ...

PCF Release Notes Advisories

Policy Control Function

Related Links and Documentation  
[PCF Release Notes](#)

Release Date	Size
25-Jul-2023	3904.95 MB

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At the bottom, you will find the SHA512 checksum. If you do not see the whole checksum, you can expand it by pressing "..." 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, refer to the following table.

**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:  > <b>certutil.exe -hashfile filename.extension SHA512</b>

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>NOTES:</b> <i>filename</i> is the name of the file. <i>extension</i> is the file extension (for example, .zip or .tgz).	

## Certificate Validation

PCF software images are signed via x509 certificates. For information and instructions on how to validate the certificates, refer to the .README file packaged with the software.

## Open Bugs for this Release

The following table lists the known bugs that remain open in this specific software release.

Bug ID	Headline
<a href="#">CSCwe87529</a>	mTLS Issue - Certificate Unknown
<a href="#">CSCwh87736</a>	N5 - For the emergency calls afReqData with UE_IDENTITY does not return any UE identity in response

## Resolved Bugs for this Release

There are no resolved bugs in this specific software release.

## 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
pcf.<version>.SPA.tgz	The PCF offline release signature package. This package contains the PCF deployment software, NED package, as well as the release signature, certificate, and verification information.
ncs-<nso_version>-pcf-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>.