



# Release Notes for the Ultra Cloud Core Redundancy Configuration Manager Version 2024.01.0

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## Redundancy Configuration Manager, Version 2024.01.0

### 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-Jan-2024
End of Life	EoL	31-Jan-2024
End of Software Maintenance	EoSM	31-Jul-2025
End of Vulnerability and Security Support	EoVSS	31-Jul-2025
Last Date of Support	LDoS	31-Jul-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
rcm.2024.01.0.SPA.tgz	2024.01.0
NED package	ncs-5.52-rcm-nc-2024.01.0
NSO	5.52

### Verified Compatibility

Products	Version
Ultra Cloud Core SMI	2024.01.1

Products	Version
CDL	1.11.6
Ultra Cloud Core UPF	2024.01.0

## 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

There are no features or enhancements in this release.

### Behavior Changes

This section covers a brief description of behavior changes introduced in this release.

Behavior Change	Description
Common-Config Directory Relocation	<p><b>Previous Behavior:</b> The RCM common-config directory location was <code>/var/lib/smi/data/common_config</code>.</p> <p><b>New Behavior:</b> The new path of the RCM common-config directory is <code>/data/&lt;rcm_ns&gt;/common_config</code> to retain the directory during SMI base image upgrade.</p> <p>The RCM configuration must include the following CLI:</p> <pre><b>k8 smf profile rcm-config-ep config-mode NSO</b></pre>

Behavior Change	Description
Prompting Wrong Route Modifiers	<p>This release introduces new CLIs to prompt wrong route modifiers in both RCM and UPF.</p> <p>The route modifier 50 is applicable to a Standby UPF/RCM node only. Hence, the Active/Pending Standby UPF will not accept the Standby route modifier value.</p> <p><b>Previous Behavior:</b> The following CLI was supported in releases prior to 2024.01.0:</p> <pre><b>rcm route-modifier destination rcm_vpnmgr_ip val &lt;2..32&gt;</b></pre> <p><b>New Behavior:</b> With this release, UPF and RCM controller will not accept out-of-limit route modifiers. If UPF or RCM controller receives an invalid route modifier, it disconnects TCP, and on reconnect UPF sends the available route modifier.</p> <p>The following <b>rcm route-modifier destination</b> CLI is enhanced to support the <b>dry-run</b> keyword:</p> <pre><b>rcm route-modifier destination rcm_vpnmgr_ip val &lt;2..32,50&gt;</b> <b>dry-run { true   false }</b></pre> <p>When <b>dry-run</b> is set to <b>true</b> (default value), it only prints the route modifier value and the UPF state will be sent to UPF. To send the route modifier to UPF, set <b>dry-run</b> to <b>false</b>.</p> <p><b>Customer Impact:</b> If the CLI is used in a script, then the script must be updated with the enhanced CLI.</p>
Sending IP Pool Audit Message Periodically	<p><b>Previous Behavior:</b> RCM did not support the timer to initiate IP pool audit periodically.</p> <p><b>New Behavior:</b> With this release, RCM supports CLI commands to trigger the IP pool audit message manually (Exec mode CLI) and to configure the time interval between successive audits (RCM Service Configuration mode CLI).</p> <p>The following are the new CLI commands:</p> <ul style="list-style-type: none"> <li>Using the <b>send-ip-pool-audit</b> CLI command in Exec mode, RCM sends the IP pool audit message.</li> <li>Using the <b>[ no ] ip-pool-audit interval audit_timer</b> CLI command in the RCM Service Configuration mode, RCM sets a time interval to repeat the auditing of IP pool information towards RCM controller. <i>audit_timer</i> is the timer value ranging from 900 to 43200 seconds.</li> </ul> <p>The default value of the timer is 1 hour.</p> <p>The <b>no ip-pool-audit interval</b> command disables the timer.</p>

# Installation and Upgrade Notes

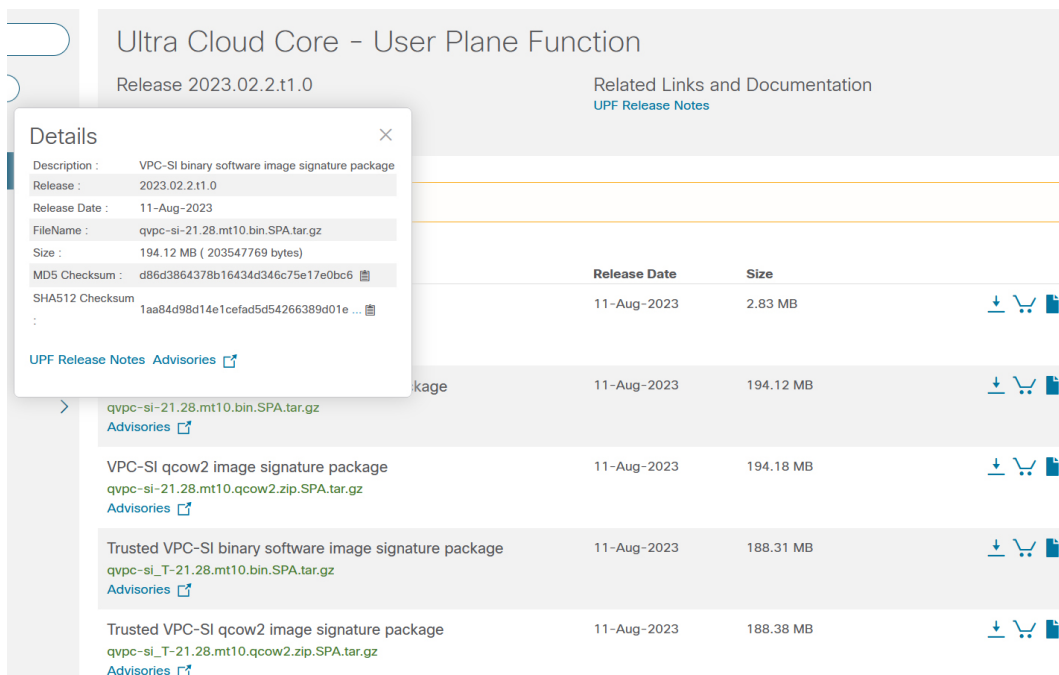
This Release Note does not contain general installation and upgrade instructions. Refer to the existing installation documentation for specific installation and upgrade considerations.

## 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 following screenshot is an example of a UPF release posted in the Software Download page.



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

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

RCM 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.

## RCM Ops Center Logging Levels

It is recommended to use the following logging levels for RCM Ops Center to ensure that logs do not overflow.

```
logging level application debug
logging level transaction debug
logging level tracing off

logging name infra.dpd.core level application off
logging name infra.dpd.core level transaction off
logging name infra.dpd.core level tracing off
logging name infra.application.core level application off
logging name infra.application.core level transaction off
logging name infra.application.core level tracing off

logging name infra.etcd_client.core level application warn
logging name infra.etcd_client.core level transaction warn
logging name infra.etcd_client.core level tracing off
logging name infra.virtual_msg_queue.core level application warn
logging name infra.virtual_msg_queue.core level transaction warn
logging name infra.virtual_msg_queue.core level tracing off
logging name infra.edr.core level application warn
logging name infra.edr.core level transaction warn
logging name infra.edr.core level tracing off
logging name infra.ipcstream.core level application warn
logging name infra.ipcstream.core level transaction warn
logging name infra.ipcstream.core level tracing off
logging name infra.memory_cache.core level application warn
```

```

logging name infra.memory_cache.core level transaction warn
logging name infra.memory_cache.core level tracing off
logging name infra.topology_lease.core level application warn
logging name infra.topology_lease.core level transaction warn
logging name infra.topology_lease.core level tracing off
logging name infra.ipc_action.core level application warn
logging name infra.ipc_action.core level transaction warn
logging name infra.ipc_action.core level tracing off
logging name infra.vrf_etcd_update.core level application warn
logging name infra.vrf_etcd_update.core level transaction warn
logging name infra.vrf_etcd_update.core level tracing off
logging name infra.config.core level application warn
logging name infra.config.core level transaction warn
logging name infra.config.core level tracing off
logging name infra.heap_dump.core level application warn
logging name infra.heap_dump.core level transaction warn
logging name infra.heap_dump.core level tracing off
logging name infra.resource_monitor.core level application warn
logging name infra.resource_monitor.core level transaction warn
logging name infra.resource_monitor.core level tracing off
logging name infra.topology.core level application warn
logging name infra.topology.core level transaction warn
logging name infra.topology.core level tracing off
logging name infra.transaction.core level application warn
logging name infra.transaction.core level transaction warn
logging name infra.transaction.core level tracing off
logging name infra.diagnostics.core level application warn
logging name infra.diagnostics.core level transaction warn
logging name infra.diagnostics.core level tracing off

```

## 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
<a href="#">CSCwi68538</a>	RCM-Checkpointmgr crash due to fatal error concurrent map read and map write
<a href="#">CSCwi73027</a>	Stale data in RCM post switchover
<a href="#">CSCwi74961</a>	TCP hardening - Timeout observed during socket write during switchover

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

Bug ID	Headline	Behavior Change
<a href="#">CSCwe23786</a>	CLI controlled rcm vpnmgr message to clear the contextpoolinfo in rcm controller	Yes
<a href="#">CSCwi10019</a>	Active UPF is being assigned Standby UPF Route Modifier	Yes
<a href="#">CSCwi40285</a>	[soltest] RCM common config directory wiped out during SMI base image upgrade	Yes

## 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.

Software Packages	Description
rcm.<version>.SPA.tgz	The RCM offline release signature package. This package contains the RCM deployment software, NED package, as well as the release signature, certificate, and verification information.
ncs-<nso_version>-rcm-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 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>.



