



# Release Notes for the Cisco Cloud Native BNG Control Plane, Version 2023.04.0

**First Published:** October 31, 2023

## Introduction

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

## Release Package Version Information

Software Packages	Version
bng.2023.04.0.SPA.tgz	2023.04.0

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

## Verified Compatibility

This version of the cnBNG Control Plane has been verified with the following software components/packages. Consult the individual components/packages release notes for details.

Products	Version
BNG UP (ASR 9K)	IOS XR Release 7.9.2*
SMI CEE	2023.04.1.12
SMI Cluster Deployer	2023.04.1.12
SMI Base ISO Image	20.04.0-20231009

\*Subject to feature availability

## Feature and Behavior Changes

For a complete list of feature and behavior changes associated with this software release, refer to the [Cloud Native BNG Control Plane Release Change Reference](#).

## Related Documentation

For a complete list of documentation available for this release, go to:

<https://www.cisco.com/c/en/us/support/routers/cloud-native-broadband-network-gateway-bng/products-installation-and-configuration-guides-list.html>

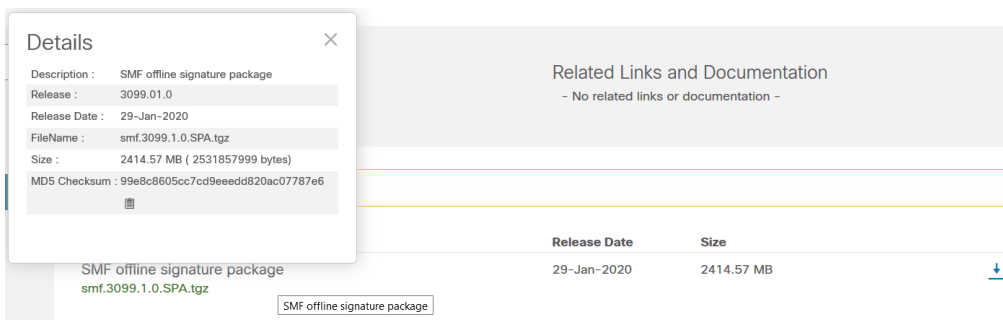
## Installation and Upgrade Notes

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](#) and verify that it matches the one provided on the software download page.

To calculate a SHA512 checksum on your local desktop, 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 -hash file <filename>.<extension> SHA512
Apple MAC	Open a terminal window and type the following command  \$ shazam -a 512 <filename>.<extension>

Linux	Open a terminal window and type the following command  <code>\$ sha512sum &lt;filename&gt;.&lt;extension&gt;</code>  Or  <code>\$ shamus -a 512 &lt;filename&gt;.&lt;extension&gt;</code>
<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, open a case with the Cisco Technical Assistance Center.

## Certificate Validation

cnBNG CP software images are signed via x509 certificates. View the .README file packaged with the software for information and instructions on how to validate the certificates.

## Open Bugs for This Release

None in this 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 builds from main branch.

**TTN** → Throttle of Throttle Number.

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

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](#) provides descriptions of the packages that are available with this release.

**Table 2 - Release Package Information**

Software Packages	Description
bng.<version>.SPA.tgz	The cnBNG CP offline release signature package. This package contains the cnBNG CP deployment software as well as the release signature, certificate, and verification information.

## 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>.

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