

Cisco Nexus 3500 Series NX-OS Software Upgrade and Downgrade Guide, Release 10.5(x)

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Preface

This preface includes the following sections:

- Audience, on page v
- Document Conventions, on page v
- Related Documentation for Cisco Nexus 3500 Series Switches, on page vi
- Documentation Feedback, on page vi
- Communications, Services, and Additional Information, on page vi

Audience

This publication is for network administrators who install, configure, and maintain Cisco Nexus switches.

Document Conventions

Command descriptions use the following conventions:

Convention	Description
bold	Bold text indicates the commands and keywords that you enter literally as shown.
Italic	Italic text indicates arguments for which the user supplies the values.
[x]	Square brackets enclose an optional element (keyword or argument).
[x | y]	Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice.
{x | y}	Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice.
[x {y | z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.

Convention	Description
`variable`	Indicates a variable for which you supply values, in context where italics cannot be used.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Examples use the following conventions:

Convention	Description
`screen font`	Terminal sessions and information the switch displays are in screen font.
`boldface screen font`	Information you must enter is in boldface screen font.
italic screen font	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Related Documentation for Cisco Nexus 3500 Series Switches

The entire Cisco Nexus 3500 Series switch documentation set is available at the following URL:

https://www.cisco.com/c/en/us/support/switches/nexus-3000-series-switches/tsd-products-support-series-home.html

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to nexus3k-docfeedback@cisco.com. We appreciate your feedback.

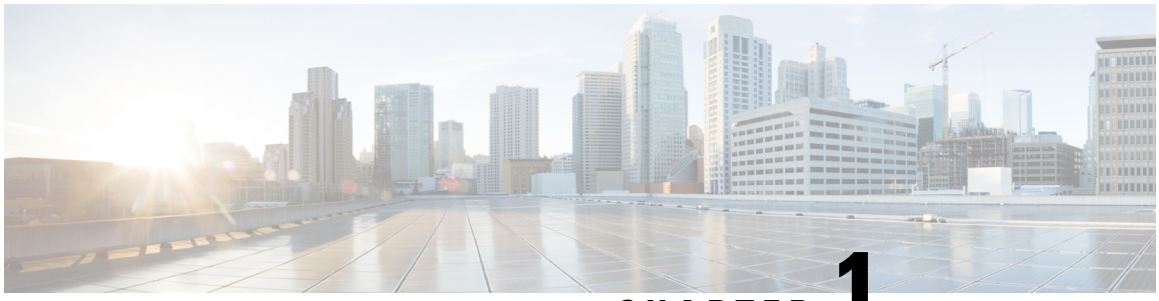
Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at Cisco Profile Manager.
- To get the business results you're looking for with the technologies that matter, visit Cisco Services.
- To submit a service request, visit Cisco Support.
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit Cisco DevNet.
- To obtain general networking, training, and certification titles, visit Cisco Press.
- To find warranty information for a specific product or product family, access Cisco Warranty Finder.

Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

Preface



CHAPTER 1

New and Changed Information

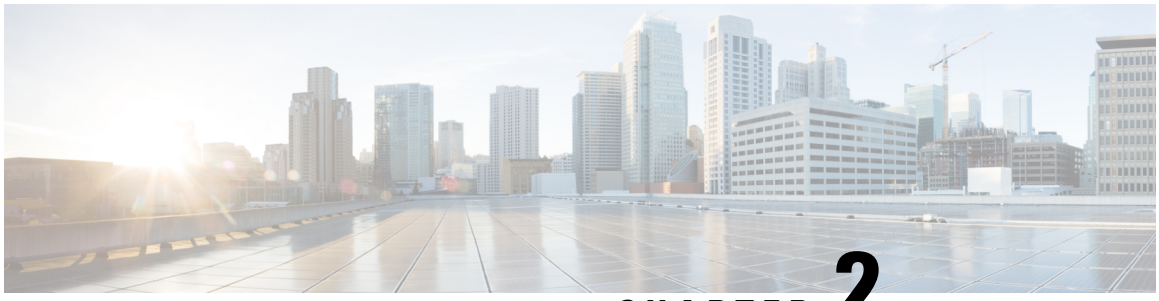
• New and Changed Information, on page 1

New and Changed Information

Table 1: New and Changed Features

Feature	Description	Changed in Release	Where Documented
NA	No feature updates for this release.	10.5(1)F	NA

New and Changed Information



CHAPTER 2

Upgrading or Downgrading the Cisco Nexus 3500 Series NX-OS Software

This chapter describes how to upgrade or downgrade the Cisco NX-OS software. It contains the following sections:

- About the Software Image, on page 3
- Recommendations for Upgrading the Cisco NX-OS Software, on page 3
- Prerequisites for Upgrading the Cisco NX-OS Software, on page 4
- Prerequisites for Downgrading the Cisco NX-OS Software, on page 4
- Cisco NX-OS Software Upgrade Guidelines, on page 5
- Cisco NX-OS Software Downgrade Guidelines, on page 5
- Booting the Switch from the USB, on page 6
- Upgrading the Cisco NX-OS Software, on page 6
- NX-OS Upgrade History, on page 8
- Downgrading to an Earlier Software Release, on page 9

About the Software Image

Each device is shipped with the Cisco NX-OS software. The Cisco NX-OS software consists a single NXOS software image. Only this image is required to load the Cisco NX-OS operating system. This image runs on all Cisco Nexus 3500 Series switches.

Note Another type of binary file is the software maintenance upgrade (SMU) package file. SMUs contain fixes for specific defects. They are created to respond to immediate issues and do not include new features. SMU package files are available for download from Cisco.com and generally include the ID number of the resolved defect in the filename. For more information on SMUs, see the *Cisco Nexus 3500 Series NX-OS System Management Configuration Guide*.

Recommendations for Upgrading the Cisco NX-OS Software

Cisco recommends performing a Nexus Health and Configuration Check before performing an upgrade. The benefits include identification of potential issues, susceptible Field Notices and Security Vulnerabilities,

missing recommended configurations and so on. For more information about the procedure, see Perform Nexus Health and Configuration Check.

Prerequisites for Upgrading the Cisco NX-OS Software

Upgrading the Cisco NX-OS software has the following prerequisites:

- Ensure that everyone who has access to the device or the network is not configuring the device or the network during this time. You cannot configure a device during an upgrade. Use the **show configuration session summary** command to verify that you have no active configuration sessions.
- Save, commit, or discard any active configuration sessions before upgrading or downgrading the Cisco NX-OS software image on your device. On a device with dual supervisors, the active supervisor module cannot switch over to the standby supervisor module during the Cisco NX-OS software upgrade if you have an active configuration session.
- Ensure that the device has a route to the remote server. The device and the remote server must be in the same subnetwork if you do not have a router to route traffic between subnets. To verify connectivity to the remote server, use the **ping** command.

```
switch# ping 172.18.217.1 vrf management
PING 172.18.217.1 (172.18.217.1): 56 data bytes
64 bytes from 172.18.217.1: icmp_seq=0 ttl=239 time=106.647 ms
64 bytes from 172.18.217.1: icmp_seq=1 ttl=239 time=76.807 ms
64 bytes from 172.18.217.1: icmp_seq=2 ttl=239 time=76.593 ms
64 bytes from 172.18.217.1: icmp_seq=3 ttl=239 time=81.679 ms
64 bytes from 172.18.217.1: icmp_seq=4 ttl=239 time=76.5 ms

--- 172.18.217.1 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 76.5/83.645/106.647 ms
```

For more information on configuration sessions, see the *Cisco Nexus 3500 Series NX-OS System Management Configuration Guide*.

Prerequisites for Downgrading the Cisco NX-OS Software

Downgrading the Cisco NX-OS software has the following prerequisites:

- Verify the compatibility of the software using the **show incompatibility system bootflash:***filename* command. If an incompatibility exists, disable any features that are incompatible with the downgrade image before downgrading the software.

Cisco NX-OS Software Upgrade Guidelines



Note The Cisco Nexus 3500 Series NX-OS Release Notes contain specific upgrade guidelines for each release. See the Release Notes for the target upgrade release before starting the upgrade. The Cisco Nexus 9000 and 3000 ISSU Support Matrix provides information about recommended paths for upgrades from your current to a target release.

Before attempting to upgrade to any software image, follow these guidelines:

- Cisco Nexus 3500 family switches support 32 bit image.
- An upgrade to Cisco NX-OS Release 10.1(1) is supported only for the Cisco Nexus C3548P-XL switch.
- Schedule the upgrade when your network is stable and steady.
- Avoid any power interruption, which could corrupt the software image, during the installation procedure.
- The supervisor module must have connection on the console ports to maintain connectivity when switchovers occur during a software upgrade. See the *Hardware Installation Guide* for your specific chassis.
- The following upgrade paths are supported for upgrading from an earlier release to Cisco NX-OS Release 10.1(1):
  - 9.2(4) and later → 10.1(1)
  - 9.3(6) → 10.1(1)

  To upgrade from Cisco NX-OS Release 9.2(4) and later, we recommend that you use the **install all** command. To upgrade from Cisco NX-OS Release 9.3(6) you must copy the running configuration to the startup configuration and reload the device.
- Cisco Nexus 3500 family switches support 32-bit image.
- Ultra-low power mode is not support in DC devices.
- Beginning Cisco NX-OS Release 10.3(3)F, Wideflow IFACL Redirect on IP Port ACLs which is an alternative to Openflow is supported on Cisco Nexus 3548-XL switches. For more information, refer to following links:
  - For configuring Wideflow IFACL Redirect on IP Port ACLs, see Configuring Wideflow IFACL Redirect on IP Port ACLs.
  - For Openflow related information, see Cisco OpenFlow Agent for Nexus 3000 and 9000 Series Switches, and NXOS NXAPI (Wideflow IFACL Redirect on IP Port ACLs) Migration from OpenFlow.

Cisco NX-OS Software Downgrade Guidelines

Before attempting to downgrade to an earlier software release, follow these guidelines:

- The supervisor module must have connection on the console ports to maintain connectivity when switchovers occur during a software downgrade. See the *Hardware Installation Guide* for your specific chassis.
- Cisco NX-OS automatically installs and enables the guest shell by default. However, if the device is reloaded with a Cisco NX-OS image that does not provide guest shell support, the existing guest shell is automatically removed and a %VMAN-2-INVALID_PACKAGE message is issued. As a best practice, remove the guest shell with the **guestshell destroy** command before downgrading to an earlier Cisco NX-OS image.
- You can downgrade the switch software from Cisco NX-OS Release 10.1(1) to Cisco NX-OS Release 9.2(4) and later, or to 9.3(6) by using the **install all** command.

Booting the Switch from the USB

You can optionally choose to boot the switch from an external flash memory drive at the loader prompt. The supported BIOS version for the Cisco Nexus C3548P-XL switch is 5.4.1. Following are the various options for loading the image from an external flash memory drive:

- You can load the image from USB1 when either the USB1 slot is occupied or when both the USB slots are occupied.

```
Loader> boot usb1: <image>
```

- You can load the image from USB2 only when the USB2 slot is occupied.

```
Loader> boot usb2: <image>
```

- You can load the image from USB2 when both the USB slots are occupied.

```
Loader> boot usb2: <image>
```

- You can load the image from USB1 when only the USB1 slot is occupied or when both the USB slots are occupied.
- You can load the image from USB2 when only the USB2 slot is occupied.
- You can load the image from USB2 when both the USB slots are occupied.

Upgrading the Cisco NX-OS Software

Note To upgrade from Cisco NX-OS Release 9.2(4) and later, we recommend that you use the **install all** command. To upgrade from Cisco NX-OS Release 9.3(6) you must copy the running configuration to the startup configuration and reload the device.

Note If an error message appears during the upgrade, the upgrade will fail because of the reason indicated.

SUMMARY STEPS

1. **Read the release notes for the software image file for any exceptions to this upgrade procedure.** See the Cisco Nexus 3500 Series NX-OS Release Notes.
2. Log in to the device on the console port connection.
3. Ensure that the required space is available for the image files to be copied.
4. If you need more space on the device, delete unnecessary files to make space available.
5. Upgrade the Cisco NX-OS software to new Cisco NX-OS Release.
6. Copy the software images to the device using a transfer protocol. You can use FTP, TFTP, SCP, or SFTP.
7. Check the impact of upgrading the software before actually performing the upgrade.
8. Save the running configuration to the startup configuration.
9. Upgrade the Cisco NX-OS software using the **install all nxos bootflash:***filename* [**no-reload** | **non-interruptive** | **serial**] command.
10. (Optional) Log in and verify that the device is running the required software version.
11. (Optional) Verify the entire upgrade process.
12. (Optional) If necessary, install any licenses to ensure that the required features are available on the device. See the *Cisco NX-OS Licensing Guide*.

DETAILED STEPS

Procedure

Step 1 **Read the release notes for the software image file for any exceptions to this upgrade procedure.** See the Cisco Nexus 3500 Series NX-OS Release Notes.

Step 2 Log in to the device on the console port connection.

Step 3 Ensure that the required space is available for the image files to be copied.

```
switch# dir bootflash:
```

Note
We recommend that you have the image files for at least one previous release of the Cisco NX-OS software on the device to use if the new image files do not load successfully.

Step 4 If you need more space on the device, delete unnecessary files to make space available.

Step 5 Upgrade the Cisco NX-OS software to new Cisco NX-OS Release.

Step 6 Copy the software images to the device using a transfer protocol. You can use FTP, TFTP, SCP, or SFTP.

```
switch# copy scp://user@server-ip/image-path/ bootflash: vrf management
```

```
switch# copy scp://user@scpserver.cisco.com//download/nxos.10.1.1.bin bootflash: vrf management
```

Step 7 Check the impact of upgrading the software before actually performing the upgrade.

```
switch# show install all impact nxos bootflash:nxos.10.1.1.bin
```

Step 8 Save the running configuration to the startup configuration.

```
switch# copy running-config startup-config
```

Step 9 Upgrade the Cisco NX-OS software using the **install all nxos bootflash:***filename* [**no-reload** | **non-interruptive** | **serial**] command.

```
switch# install all nxos bootflash:nxos.10.1.1.bin
```

Note
If you enter the **install all** command without specifying a filename, the command performs a compatibility check, notifies you of the modules that will be upgraded, and confirms that you want to continue with the installation. If you choose to proceed, it installs the NXOS software image that is currently running on the switch and upgrades the BIOS of various modules from the running image if required.

Step 10 (Optional) Log in and verify that the device is running the required software version.

```
switch# show version
```

Step 11 (Optional) Verify the entire upgrade process.

```
switch# show install all status
```

Step 12 (Optional) If necessary, install any licenses to ensure that the required features are available on the device. See the *Cisco NX-OS Licensing Guide*.

NX-OS Upgrade History

During the life of a Cisco Nexus 3548 switch, many upgrade procedures can be performed. Upgrades can occur for maintenance purposes or to update the operating system to obtain new features. Over time, switches may be updated on numerous occasions. Viewing the types of upgrades and when they occurred can help in troubleshooting issues or simply understanding the history of the switch.

Beginning with Cisco NX-OS Release 9.3(5), Cisco Nexus 3548 switches log all upgrade activity performed over time providing a comprehensive history of these events. The stored upgrade history types are:

- Cisco NX-OS System Upgrades
- Electronic Programmable Logic Device (EPLD) Upgrades
- Software Maintenance Upgrade (SMU) Installations

View the Cisco NX-OS upgrade history by entering the **show upgrade history** command. The output displays any upgrade activity that previously occurred on the switch and defines the start and end times for each event. The following is an example output of the **show upgrade history** command:

```
switch# show upgrade history
switch# show upgrade history
TYPE              VERSION DATE                 STATUS
NXOS system image 9.3(6)  29 Jan 2021 05:41:11 Installation started
NXOS system image 9.3(6)  29 Jan 2021 05:55:13 Installation End
NXOS system image 10.1(1) 29 Jan 2021 05:56:06 Installation started
NXOS system image 10.1(1) 29 Jan 2021 14:59:05 Installation End
```

Downgrading to an Earlier Software Release

Note If an error message appears during the downgrade, the downgrade will fail because of the reason indicated.

SUMMARY STEPS

1. **Read the release notes for the software image file for any exceptions to this downgrade procedure.** See the *Cisco Nexus 3500 Series NX-OS Release Notes*.
2. Log in to the device on the console port connection.
3. Verify that the image files for the downgrade are present on the device bootflash:.
4. If the software image file is not present, log in to Cisco.com, choose the software image file for your device from the following URL, and download it to a file server: http://software.cisco.com/download/navigator.html.
5. Copy the software images to the device using a transfer protocol. You can use FTP, TFTP, SCP, or SFTP.
6. Check for any software incompatibilities.
7. Disable any features that are incompatible with the downgrade images.
8. Save the running configuration to the startup configuration.
9. Downgrade the Cisco NX-OS software.
10. (Optional) Log in and verify that the device is running the required software version.
11. (Optional) Display the entire downgrade process.

DETAILED STEPS

Procedure

Step 1 **Read the release notes for the software image file for any exceptions to this downgrade procedure.** See the *Cisco Nexus 3500 Series NX-OS Release Notes*.

Step 2 Log in to the device on the console port connection.

Step 3 Verify that the image files for the downgrade are present on the device bootflash:.

```
switch# dir bootflash:
...
```

Step 4 If the software image file is not present, log in to Cisco.com, choose the software image file for your device from the following URL, and download it to a file server: http://software.cisco.com/download/navigator.html.

Note
If you need more space on the device bootflash:, use the **delete** command to remove unnecessary files.

Step 5 Copy the software images to the device using a transfer protocol. You can use FTP, TFTP, SCP, or SFTP.

```
switch# copy scp://user@server-ip/image-path bootflash: vrf management
```

```
switch# copy scp://user@scpserver.cisco.com//download/nxos.9.2.4.bin bootflash: vrf management
```

Step 6 Check for any software incompatibilities.

```
switch# show incompatibility nxos bootflash:nxos.9.2.4.bin
Checking incompatible configuration(s)
No incompatible configurations
```

The resulting output displays any incompatibilities and remedies.

Step 7 Disable any features that are incompatible with the downgrade images.

Step 8 Save the running configuration to the startup configuration.

```
switch# copy running-config startup-config
```

Step 9 Downgrade the Cisco NX-OS software.

```
switch# install all nxos bootflash:nxos.9.2.4.bin
```

Note
If you enter the **install all** command without specifying a filename, the command performs a compatibility check, notifies you of the modules that will be upgraded, and confirms that you want to continue with the installation. If you choose to proceed, it installs the NXOS software image that is currently running on the switch and upgrades the BIOS of various modules from the running image if required.

Step 10 (Optional) Log in and verify that the device is running the required software version.

```
switch# show version
```

Step 11 (Optional) Display the entire downgrade process.

Example:

```
switch# show install all status
```