CONTENTS

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

CHAPTER 1
New and Changed Information 1
  New and Changed Information 1

CHAPTER 2
Upgrading or Downgrading the Cisco Nexus 3500 Series NX-OS Software 3
  About the Software Image 3
  Prerequisites for Upgrading the Cisco NX-OS Software 3
  Prerequisites for Downgrading the Cisco NX-OS Software 4
  Cisco NX-OS Software Upgrade Guidelines 4
  Cisco NX-OS Software Downgrade Guidelines 6
  Booting the Switch from the USB 6
  Upgrading the Cisco NX-OS Software 6
  Downgrading to an Earlier Software Release 8
Preface

This preface includes the following sections:

Audience

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

Document Conventions

Command descriptions use the following conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bold</td>
<td>Bold text indicates the commands and keywords that you enter literally as shown.</td>
</tr>
<tr>
<td>Italic</td>
<td>Italic text indicates arguments for which the user supplies the values.</td>
</tr>
<tr>
<td>[x]</td>
<td>Square brackets enclose an optional element (keyword or argument).</td>
</tr>
<tr>
<td>[x</td>
<td>y]</td>
</tr>
<tr>
<td>{x</td>
<td>y}</td>
</tr>
<tr>
<td>[x {y</td>
<td>z}]</td>
</tr>
<tr>
<td>variable</td>
<td>Indicates a variable for which you supply values, in context where italics cannot be used.</td>
</tr>
<tr>
<td>string</td>
<td>A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.</td>
</tr>
</tbody>
</table>

Examples use the following conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>screen font</td>
<td>Terminal sessions and information the switch displays are in screen font.</td>
</tr>
<tr>
<td>boldface screen font</td>
<td>Information you must enter is in boldface screen font.</td>
</tr>
<tr>
<td>italic screen font</td>
<td>Arguments for which you supply values are in italic screen font.</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>Nonprinting characters, such as passwords, are in angle brackets.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Default responses to system prompts are in square brackets.</td>
</tr>
<tr>
<td>!, #</td>
<td>An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.</td>
</tr>
</tbody>
</table>
Related Documentation for Cisco Nexus 3500 Series Switches

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

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 impact 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 Marketplace.
- 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.
New and Changed Information

This chapter provides release-specific information for each new and changed feature in the Cisco Nexus 3500 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.x.

- New and Changed Information, on page 1

**New and Changed Information**

This table summarizes the new and changed features for the Cisco Nexus 3500 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.x and tells you where they are documented.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Changed in Release</th>
<th>Where Documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade Process</td>
<td>Updated the section for upgrading to the new release.</td>
<td>9.2(1)</td>
<td>Upgrading the Cisco NX-OS Software, on page 6</td>
</tr>
</tbody>
</table>
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
- Prerequisites for Upgrading the Cisco NX-OS Software, on page 3
- Prerequisites for Downgrading the Cisco NX-OS Software, on page 4
- Cisco NX-OS Software Upgrade Guidelines, on page 4
- Cisco NX-OS Software Downgrade Guidelines, on page 6
- Booting the Switch from the USB, on page 6
- Upgrading the Cisco NX-OS Software, on page 6
- Downgrading to an Earlier Software Release, on page 8

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.

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.

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

• 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.
• An upgrade to Cisco NX-OS Release 9.2(x) is supported only from Cisco NX-OS Release 6.0(2)A8(9) or higher releases.

Note: You must compact the Cisco NX-OS Release image before you upgrade from Cisco NX-OS Release 6.0(2)A8(7b) to Cisco NX-OS Release 9.2(1). The compaction can be done only during the scp file copy process.

• Beginning with Cisco NX-OS Release 9.2(1), a simplified NX-OS numbering format is used for the platforms that are supported in the release. In order to support a software upgrade from releases prior to Release 7.0(3)I7(4) that have the old release format, an installer feature supplies an I9(1) label as a suffix to the actual release during the install all operation. This label is printed as part of the image during the install operation from any release prior to 7.0(3)I7(4) to Release 9.2(1), and it can be ignored. See the following example.

```bash
switch# install all nxos bootflash:nxos.9.2.1.bin
Installer will perform compatibility check first. Please wait.
Installer is forced disruptive

Verifying image bootflash:/nxos.9.2.1.bin for boot variable "nxos".
[############################] 100% -- SUCCESS

Verifying image type.
[############################] 100% -- SUCCESS

Preparing "nxos" version info using image bootflash:/nxos.9.2.1.bin.
[############################] 100% -- SUCCESS

Preparing "bios" version info using image bootflash:/nxos.9.2.1.bin.
[############################] 100% -- SUCCESS

Performing module support checks.
[############################] 100% -- SUCCESS

Notifying services about system upgrade.
[############################] 100% -- SUCCESS

Compatibility check is done:
Module bootable Impact Install-type Reason
------ -------- ------------ ------------ ------
1 yes disruptive reset Incompatible image for ISSU

Images will be upgraded according to following table:
Module Image Running-Version(pri:alt) New-Version Upg-Required
------ ------- ---------------------------------------------------------- ------------
1 nxos 7.0(3)I7(3) 9.2(1)I9(1)
1 bios v05.31(05/17/2018):v05.26(11/06/2017) v05.31(05/17/2018)
1 no

Switch will be reloaded for disruptive upgrade.
Do you want to continue with the installation (y/n)? [n] y
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.

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 N3K-C3548P-10GX is 2.0.8 and for N3K-C3548P-10G is 1.0.11. 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

If an error message appears during the upgrade, the upgrade will fail because of the reason indicated.
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/path/to/image bootflash: compact vrf management

   switch# copy scp://user@scpserver.cisco.com//download/nxos.9.2.1.bin bootflash: compact vrf management

   The compact option compresses the image while copying it to the switch’s bootflash or USB drive. SCP is the only protocol that supports the compact option.

   Note  For Cisco Nexus 3548-XL platform switches, the compact option is not supported. Therefore, copy the software image without the compact image.

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

   switch# show install all impact kickstart bootflash:nxos.9.2.1.bin

   Note  In order to accommodate upgrade compatibility from an older software version that is expecting a platform designator, the version string in the output of this command will appear as "9.2(1)I9(1)". The "I9(1)" portion of the string can be safely ignored, and it will disappear post upgrade to 9.2(1). In addition, the compatibility check will show "Wrong image."

   Note  Do not use the show install all system bootflash:nxos.9.2.1.bin command. It returns the following error: 0% -- FAIL. Return code 0x404F0003 (SRG file not present/cannot be opened).

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-disruptive | non-interruptive | serial] command.

   switch# install all nxos bootflash:nxos.9.2.1.bin
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*.

---

**Downgrading to an Earlier Software Release**

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

**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](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@scpserver.cisco.com//download/nxos.7.0.3.I7.4.bin bootflash:nxos.7.0.3.I7.4.bin
```

```
switch# copy scp://user@scpserver.cisco.com//download/n3500-uk9-kickstart.6.0.2.A6.7.bin bootflash:n3500-uk9-kickstart.6.0.2.A6.7.bin
```

```
switch# copy scp://user@scpserver.cisco.com//download/n3500-uk9.6.0.2.A6.7.bin bootflash:
```

**Step 6** Check for any software incompatibilities.
switch# show incompatibility nxos bootflash:nxos.7.0.3.I7.4.bin
Checking incompatible configuration(s)
No incompatible configurations

switch# show incompatibility system bootflash:n3500-uk9.6.0.2.A6.7.bin
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. See the following examples for downgrading to 6.x and 7.x releases.

*Note*  
Use the `no-save` and `bios-force` options when performing the downgrade to 6.x release. The `no-save` and `bios-force` options are not required when performing the downgrade to 7.x release.

switch# install all nxos bootflash:nxos.7.0.3.I7.4.bin

switch# install all kickstart bootflash:n3500-uk9-kickstart.6.0.2.A8.9.bin system n3500-uk9.6.0.2.A8.9.bin no-save bios-force

*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