

Cisco Nexus 9000 Series and Cisco Nexus 3000 Series FPGA/EPLD Upgrade Release Notes, Release 7.0(3)I2(3)

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Update History

This document lists the current and past versions of EPLD images and describes how to update them for use with the Cisco Nexus 9000 Series switches.

The following table shows the history of changes for this document.

Date	Description
March 15, 2016	Created the release notes for Release 7.0(3)I2(3).

Introduction

The Cisco Nexus 9000 Series ACI-mode switches contain several programmable logical devices (PLDs) that provide hardware functionalities in all modules. Cisco provides electronic programmable logic device (EPLD) image upgrades to enhance hardware functionality or to resolve known issues. PLDs include electronic programmable logic devices (EPLDs), field programmable gate arrays (FPGAs), and complex programmable logic devices (CPLDs), but they do not include ASICs. In this document, the term EPLD is used for FPGA and CPLDs.

The advantage of having EPLDs for some module functions is that when you need to upgrade those functions, you just upgrade their software images instead of replacing their hardware.



Note

EPLD image upgrades for an I/O module disrupt the traffic going through the module because the module must power down briefly during the upgrade. The system performs EPLD upgrades on one module at a time, so at any one time the upgrade disrupts only the traffic going through one module.

Cisco provides the latest EPLD images with each release. Typically, these images are the same as provided in earlier releases but occasionally some of these images are updated. These EPLD image updates are not mandatory unless otherwise specified. The EPLD image upgrades are independent from the Cisco ACI In Service Software Upgrade (ISSU) process, which upgrades the system and kickstart images with no impact on the network environment.

When Cisco makes an EPLD image upgrade available, these release notes announce their availability, and you can download them from <http://www.cisco.com>.

Deciding When to Upgrade EPLDs

When new EPLD images are available, the upgrades are always recommended if your network environment allows for a maintenance period in which some level of traffic disruption is acceptable. If such a disruption is not acceptable at this time, then you might consider postponing the upgrade until a better time.



Note The EPLD upgrade operation is a disruptive operation. You should execute this operation only at a programmed maintenance time. The system/kickstart ISSU upgrade is a nondisruptive upgrade.



Note Do not perform an EPLD upgrade during an ISSU system/kickstart upgrade.

Switch Requirements

The Cisco Nexus 9000 Series switch must be running the Cisco NX-OS operating system and include the following hardware:

- Supervisor modules—one or two, each with at least 200 MB of available bootflash memory (Cisco Nexus 9504, 9508, and 9516 switches)
- System controller modules—one or two (Cisco Nexus 9504, 9508, and 9516 switches)
- I/O modules (Cisco Nexus 9504, 9508, and 9516 switches)
 - One to four modules for the Cisco Nexus 9504 switch
 - One to eight modules for the Cisco Nexus 9508 switch
 - One to sixteen modules for the Cisco Nexus 9516 switch
- Fabric modules—three to six (Cisco Nexus 9504, 9508, and 9516 switches)
- Fan modules
 - Two for the Cisco Nexus 93120TX switch
 - Three for the Cisco Nexus 93128TX, 9396PX, and 9396TX switches
 - Four for the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, and 9372TX switches
- Fan trays
 - Three for the Cisco Nexus 9504, 9508, and 9516 modular switches
- Power supplies
 - One or two 650-W AC power supplies or one or two 930-W DC power supplies for the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9372TX, 9396PX, and 9396TX switches
 - One or two 1200-W AC or one or two 930-W DC power supplies for the Cisco Nexus 93120TX, 93128TX, and 9336PQ switches

- Up to four 3000-W AC power supplies or up to four 3000-W Universal AC/DC power supplies for the Cisco Nexus 9504 switch
 - Up to eight 3000-W AC power supplies or up to eight 3000-W Universal AC/DC power supplies for the Cisco Nexus 9508 switch
 - Up to 10 3000-W AC power supplies or up to 10 3000-W Universal AC/DC power supplies for the Cisco Nexus 9516 switch
- Uplink module (Cisco Nexus 93128TX, 9396PX, and 9396TX switches only)
 - M4PC-CFP2
 - M6PQ
 - M6PQ-E
 - M12PQ

You must be able to access the switch through a console, SSH, or Telnet (required for setting up a switch running in NX-OS mode but not required for a switch running in ACI-mode).

You must have administrator privileges to work with the Cisco Nexus 9000 Series switch.

EPLD Upgrades Available for NX-OS Mode Releases 7.0(3)I1(2) to 7.0(3)I2(3)

Each EPLD image that you can download from <http://www.cisco.com> is a bundle of EPLD upgrades. To see the updated EPLD versions for the Cisco Nexus NX-OS mode 3xxx switches, Cisco Nexus 93xxx NX-OS mode fixed switches, and the Cisco Nexus 95xx NX-OS mode modular switches, see the following tables.



Note

All updates to an image are shown in boldface.

Table 1: EPLD images for the Cisco Nexus 3xxx NX-OS Mode Switches

Component	EPLD Device	Release 7.0(3)I1(2)	Releases 7.0(3)I2(1) 7.0(3)I2(1a)	Releases 7.0(3)I2(2) 7.0(3)I2(2a)	Release 7.0(3)I2(2b)	Release 7.0(3)I2(3)
Cisco Nexus 31128PQ-10GE (N3K-C31128PQ-10GE)	IOFPGA	N.A. ¹	0x5 (0.005)	0x5 (0.005)	0x5 (0.005)	0x5 (0.005)
	MIFPGA	N.A. ¹	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)
Cisco Nexus 3164Q (N3K-C3164Q)	IOFPGA	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x7 (0.007)	0x7 (0.007)
	MIFPGA	0x23 (0.035)	0x23 (0.035)	0x23 (0.035)	0x23 (0.035)	0x23 (0.035)

¹ Not applicable (N.A.)—EPLD image was not available for this release.

Table 2: EPLD images for the Cisco Nexus 93xxx NX-OS Mode Fixed Switches

Component	EPLD Device	Release 7.0(3)I1(2)	Release 7.0(3)I2(1) 7.0(3)I2(1a)	Releases 7.0(3)I2(2) 7.0(3)I2(2a)	Release 7.0(3)I2(2b)	Release 7.0(3)I2(3)
Cisco Nexus 93120TX (N9K-C93120TX)	IOFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x8 (0.008)	0x8 (0.008)
Cisco Nexus 93128TX (N9K-C93128TX)	IOFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x10 (0.016)	0x10 (0.016)
	MIFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)
Cisco Nexus 9332PQ (N9K-C9332PQ)	IOFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x11 (0.017)	0x11 (0.017)
	MIFPGA	0x15 (0.021)	0x15 (0.021)	0x15 (0.021)	0x16 (0.022)	0x16 (0.022)
Cisco Nexus 9372PX (N9K-C9372PX)	IOFPGA	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x7 (0.007)	0x7 (0.007)
	MIFPGA	0x12 (0.018)	0x12 (0.018)	0x12 (0.018)	0x14 (0.020)	0x14 (0.020)
Cisco Nexus 9372P-EX (N9K-C9372PX-E)	IOFPGA	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)
	MIFPGA	0x12 (0.018)	0x12 (0.018)	0x12 (0.018)	0x14 (0.020)	0x14 (0.020)
Cisco Nexus 9372TX (N9K-C9372TX)	IOFPGA	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)	0x5 (0.005)	0x5 (0.005)
	MIFPGA	0x14 (0.020)	0x14 (0.020)	0x14 (0.020)	0x15 (0.021)	0x15 (0.021)
Cisco Nexus 9396PX (N9K-C9396PX)	IOFPGA	0x14 (0.020)	0x14 (0.020)	0x14 (0.020)	0x15 (0.021)	0x15 (0.021)
	MIFPGA	0x14 (0.020)	0x14 (0.020)	0x14 (0.020)	0x14 (0.020)	0x14 (0.020)
Cisco Nexus 9396TX (N9K-C9396TX)	IOFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x8 (0.008)	0x8 (0.008)
4-port 100-Gigabit optical uplink module (N9K-M4PC-CFP2)	MIFPGA	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)

Component	EPLD Device	Release 7.0(3)I1(2)	Release 7.0(3)I2(1) 7.0(3)I2(1a)	Releases 7.0(3)I2(2) 7.0(3)I2(2a)	Release 7.0(3)I2(2b)	Release 7.0(3)I2(3)
6-port 40-Gigabit optical uplink module (N9K-M6PQ and N9K-M6PQ-E)	MIFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)
12-port optical uplink module (N9K-M12PQ)	MIFPGA	0x20 (0.032)	0x20 (0.032)	0x20 (0.032)	0x20 (0.032)	0x20 (0.032)

Component	EPLD Device	Release 7.0(3)I1(2)	Release 7.0(3)I2(1) 7.0(3)I2(1a)	Releases 7.0(3)I2(2) 7.0(3)I2(2a)	Release 7.0(3)I2(2b)	Release 7.0(3)I2(3)
Supervisor A (N9K-SUP-A)	IOFPGA	0x22 (0.034)	0x22 (0.034)	0x22 (0.034)	0x27 (0.039)	0x27 (0.039)
Supervisor B (N9K-SUP-B)	IOFPGA	0x22 (0.034)	0x22 (0.034)	0x22 (0.034)	0x27 (0.039)	0x27 (0.039)
System Controller (N9K-SC-A)	IOFPGA	0x19 (0.025)	0x19 (0.025)	0x19 (0.025)	0x19 (0.025)	0x19 (0.025)
36-port 40-Gigabit QSFP+ aggregation I/O module (N9K-X9636PQ)	IOFPGA	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)
	MIFPGA	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)
36-port 40-Gigabit QSFP+ I/O module (N9K-X9536PQ)	IOFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)
	MIFPGA	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x7 (0.007)	0x7 (0.007)
48-port 1-/10-Gigabit SFP+ and 4-port 40-Gigabit QSFP+ I/O module (N9K-X9564PX)	IOFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)
	MIFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x10 (0.016)	0x10 (0.016)
48-port 1-/10-Gigabit BASE-T and 4-port 40-Gigabit QSFP+ I/O module (N9K-X9564TX)	IOFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)
	MIFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x8 (0.008)	0x8 (0.008)

Component	EPLD Device	Release 7.0(3)I1(2)	Release 7.0(3)I2(1) 7.0(3)I2(1a)	Releases 7.0(3)I2(2) 7.0(3)I2(2a)	Release 7.0(3)I2(2b)	Release 7.0(3)I2(3)
48-port 1-/10-Gigabit SFP+ and 4-port QSFP+ I/O module (N9K-X9464PX)	IOFPGA	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)	0x11 (0.017)
	MIFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x10 (0.016)	0x10 (0.016)
48-port 1-/10-Gigabit BASE-T and 4-port QSFP+ I/O module (N9K-X9464TX)	IOFPGA	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)
	MIFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x8 (0.008)	0x8 (0.008)
32-port 40-Gigabit QSFP+ I/O module (N9K-X9432PQ)	IOFPGA	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)	0x16 (0.022)
	MIFPGA	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)	0x13 (0.019)
8-port 100-Gigabit CFP2 I/O module (N9K-X9408)	IOFPGA	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)	0x5 (0.005)	0x5 (0.005)
	MIFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x8 (0.008)	0x8 (0.008)
Fabric module for Cisco Nexus 9504 chassis	IOFPGA	0x18 (0.024)	0x18 (0.024)	0x18 (0.024)	0x19 (0.025)	0x19 (0.025)
Fabric module for Cisco Nexus 9508 chassis	IOFPGA	0x18 (0.024)	0x18 (0.024)	0x18 (0.024)	0x19 (0.025)	0x19 (0.025)
Fabric module for Cisco Nexus 9516 chassis	IOFPGA	0x12 (0.018)	0x12 (0.018)	0x12 (0.018)	0x13 (0.019)	0x13 (0.019)

Determining Whether to Upgrade EPLD Images

You can use the **show install impact epld bootflash:** command to determine whether the EPLDs can be upgraded for all the modules or for specific modules on a switch. This command indicates the current EPLD images, new EPLD images, and whether the upgrades would be disruptive to switch operations. If the currently installed EPLD version number is greater than the new EPLD image number, you can skip the upgrade.

The following example shows the results of using the **show install impact epld bootflash:** command on a Cisco Nexus 93xxx switch. In this case, the MI FPGA and IO FPGA EPLD images can be upgraded for the switch supervisor (slot 1) and the MI FPGA2 EPLD image can be upgraded for the supervisor in the uplink module (slot 2). Both upgrades are disruptive.

```
Nexus93xx switch# show install all impact epld bootflash:n9000-epld.7.0.3.I2.3.img
Compatibility check:
Module      Type      Upgradable      Impact      Reason
-----
1           SUP      Yes             disruptive   Module Upgradable
```

```

2      Expansion      Yes      disruptive  Module Upgradable

```

Retrieving EPLD versions... Please wait.

Images will be upgraded according to following table:

Module	Type	EPLD	Running-Version	New-Version	Upg-Required
1	SUP MI	FPGA	0x11	0x12	Yes
1	SUP IO	FPGA	0x06	0x06	No

...

Nexus93xx_switch#

The following example shows the results of using the **show install impact epld bootflash:** command on a Cisco Nexus 95xx switch.

Nexus95xx_switch# **show install all impact epld bootflash:n9000-epld.7.0.3.I2.3.img**

Compatibility check:

Module	Type	Upgradable	Impact	Reason
2	LC	Yes	disruptive	Module Upgradable
6	LC	No	none	Module is not Online
7	LC	Yes	disruptive	Module Upgradable
22	FM	Yes	disruptive	Module Upgradable
23	FM	Yes	disruptive	Module Upgradable
24	FM	Yes	disruptive	Module Upgradable
25	FM	Yes	disruptive	Module Upgradable
26	FM	Yes	disruptive	Module Upgradable
27	SUP	Yes	disruptive	Module Upgradable
29	SC	Yes	disruptive	Module Upgradable

Retrieving EPLD versions... Please wait.

Images will be upgraded according to following table:

Module	Type	EPLD	Running-Version	New-Version	Upg-Required
2	LC MI	FPGA	0x12	0x13	Yes
2	LC IO	FPGA	0x15	0x16	No
7	LC MI	FPGA	0x12	0x13	Yes
7	LC IO	FPGA	0x15	0x16	No
22	FM IO	FPGA	0x15	0x18	Yes
23	FM IO	FPGA	0x15	0x18	Yes
24	FM IO	FPGA	0x15	0x18	Yes
25	FM IO	FPGA	0x15	0x18	Yes
26	FM IO	FPGA	0x15	0x18	Yes
27	SUP IO	FPGA	0x22	0x22	No
29	SC IO	FPGA	0x17	0x19	No

The following example shows the results of using the **show install impact epld bootflash:** command on a Cisco Nexus 3xxx switch.

Nexus3164PQ_switch# **show install all impact epld n9000-epld.7.0.3.I2.3.img**

Compatibility check:

Module	Type	Upgradable	Impact	Reason
1	SUP	Yes	disruptive	Module Upgradable

Retrieving EPLD versions... Please wait.

Images will be upgraded according to following table:

Module	Type	EPLD	Running-Version	New-Version	Upg-Required
1	SUP MI	FPGA	0x22	0x22	No
1	SUP IO	FPGA	0x06	0x06	No
1	SUP MI	FPGA2	0x22	0x22	No

Downloading the EPLD Images

Before you can prepare the EPLD images for installation, you must download them to the FTP or management server.

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- Step 1** From a browser, go to <http://www.cisco.com>.
The browser will display the Cisco website.
- Step 2** From the Products & Services tab, choose **Switches**.
The Switches page opens.
- Step 3** In the Data Center area, click the arrow next to View Products.
The page lists the Data Center products.
- Step 4** Click **Nexus 9000**.
The Cisco Nexus 9000 Series Switches page opens.
- Step 5** In the Support area, click **Download Software**.
The Downloads page opens and lists the Data Center switches.
- Step 6** Choose a Cisco Nexus 9000 Series switch from the list under **Data Center Switches > Cisco Nexus 9000 Series Switches**.
The Log In page opens.
- Step 7** Log in as follows:
- If you are an existing user, enter your username in the **User Name** field and your password in the **Password** field.
 - If you are a new user, click **Register Now** and provide the required information before returning to the Log In page and logging in with your new username.
- The Downloads page lists the software types that can be downloaded for the switch that you specified.
- Step 8** Click **NX-OS EPLD Updates**.
The Downloads page lists software releases that you can download.
- Step 9** Choose **Latest Releases > 7.0(3)I2(3)**.
The Downloads page displays image information, including a link to the downloadable Tar file, to the right of the releases.
- Step 10** Click the link for the Tar file.
The Downloads page displays a Download button and lists information for the Tar file.
- Step 11** Click **Download**.
The Supporting Documents page opens to display the rules for downloading the software.
- Step 12** Read the rules and click **Agree**.
A File Download dialog box opens to ask if you want to open or save the images file.
- Step 13** Click **Save**.
The Save As dialog box appears.
- Step 14** Indicate where to save the Tar file and click **Save**.
The Tar file saves to the location that you specified.
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What to Do Next

You are ready to prepare the EPLD images for Installation.

Installation Guidelines

You can upgrade EPLDs using CLI commands on the Cisco Nexus 9000 Series switch. Follow these guidelines when you upgrade EPLDs:

- Before you upgrade any EPLD images, be sure that you have updated the Cisco ACI operating system to the level required for the images and be sure that you have an EPLD image file.
- You can execute an upgrade from the active supervisor module only. This upgrade is for one or all of the modules as follows:
 - You can upgrade a module individually.
 - You can upgrade all modules sequentially.
 - You can upgrade all modules in parallel.
- You can update the images for one or all modules whether the switch is online or offline as follows:
 - If the modules are online, only the EPLD images with version numbers that differ from the new EPLD images are upgraded.
 - If the modules are offline, all of the EPLD images are upgraded.
- On a Cisco Nexus 95xx switch that has two supervisor modules, upgrade the EPLDs for the standby supervisor and then switch the active supervisor to the standby mode to upgrade its EPLDs (the supervisor switchover is not disruptive to traffic on Cisco Nexus 95xx switches). On a switch that has only one supervisor module, you can upgrade the active supervisor, but this will disrupt its operations during the upgrade.
- If you interrupt an upgrade, you must upgrade the module that is being upgraded again.
- The upgrade process disrupts traffic on the targeted module.
- Do not insert or remove any modules while an EPLD upgrade is in progress.

Upgrading the EPLD Images

If you have a Cisco Nexus 9000 Series switch that is running Cisco NX-OS Release 7.0(3)I2(3) build or later build, follow the special upgrade steps presented here.

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- Step 1** Copy the `n9000-dk9.7.0.3.I2.3.bin` and `n9000-epld.7.0.3.I2.3.img` images to bootflash.
- Step 2** To determine if you need to upgrade the BIOS for the image, use the **show install all impact** command and see the Upgrade Required (Upg-Required) field for the BIOS row in the command output.
- Step 3** If you do not need to upgrade the BIOS, set the boot variable using the **boot nxos boot flash:n9000-dk9.7.0.3.I2.3.bin** command.
- Step 4** Enter the **copy running-config startup-config** command to set the startup boot variables to the NX-OS image.
- Step 5** If you need to upgrade the BIOS, enter the **install all nxos bootflash:n9000-dk9.7.0.3.I2.3.bin** command.
- Step 6** Enter the **install epld bootflash:n9000-epld.7.0.3.I2.3.img module all** command to upgrade the EPLD. The chassis will reboot automatically.
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Verifying the EPLD Upgrades

You can verify the EPLD upgrades for each slot in a modular switch by using the command the **show version module slot_number epld** command.

Displaying the Status of EPLD Upgrades

To display the status of EPLD upgrades on the switch, use the **show install epld status** command.

Limitations

When EPLDs are upgraded, the following guidelines and observations apply:

- If a module is not online, you cannot upgrade its EPLD images.
- If there are two supervisors installed in the switch (Cisco Nexus 9504, 9508, and 9516 only), you can either upgrade only the standby supervisor from the active supervisor or upgrade all modules (including both supervisor modules) by using the following commands:

- **install epld bootflash: image module standby_supervisor_slot_number** (upgrades only the standby supervisor module)



Note After you use this command, you can switchover the active and standby supervisor modules and then upgrade the other supervisor.

- **install epld bootflash: image module all** (upgrades all of the modules)

- If there is only one supervisor installed in the switch, your upgrading or downgrading of EPLD images is disruptive.

Related Documentation

The entire Cisco NX-OS 9000 Series documentation set is available at the following URL:

http://www.cisco.com/en/US/products/ps13386/tsd_products_support_series_home.html

Release Notes

The release notes are available at the following URL:

http://www.cisco.com/en/US/products/ps13386/prod_release_notes_list.html

Configuration Guides

These guides are available at the following URL:

http://www.cisco.com/en/US/products/ps13386/products_installation_and_configuration_guides_list.html

The documents in this category include:

- *Cisco Nexus 2000 Series NX-OS Fabric Extender Software Configuration Guide for Cisco Nexus 9000 Series Switches*
- *Cisco Nexus 9000 Series NX-OS Fundamentals Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS High Availability and Redundancy Guide*
- *Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Multicast Routing Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Quality of Service Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Security Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS System Management Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide*
- *Cisco Nexus 9000 Series NX-OS Verified Scalability Guide*
- *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide*

Other Software Documents

- *Cisco Nexus 7000 Series and 9000 Series NX-OS MIB Quick Reference*
- *Cisco Nexus 9000 Series NX-OS Programmability Guide*
- *Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide*
- *Cisco Nexus 9000 Series NX-OS System Messages Reference*
- *Cisco Nexus 9000 Series NX-OS Troubleshooting Guide*

- *Cisco NX-OS Licensing Guide*
- *Cisco NX-OS XML Interface User Guide*

Hardware Documents

- *Cisco Nexus 3000 Series Hardware Installation Guide*
- *Cisco Nexus 93120TX NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 93128TX NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9332PQ NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9372PX and 9372PX-E NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9372TX NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9396PX NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9396TX NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9504 NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9508 NX-OS-Mode Switch Hardware Installation Guide*
- *Cisco Nexus 9516 NX-OS-Mode Switch Hardware Installation Guide*
- *Regulatory, Compliance, and Safety Information for the Cisco Nexus 3000 and 9000 Series*

Documentation Feedback

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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