Cisco Nexus 3000 Series FPGA/EPLD Upgrade Release Notes, Release 7.0(3)I7(1)

This document lists the current and past versions of EPLD images and describes how to update them for use with the Cisco Nexus 3000 Series switches that run Cisco Nexus 9000 Series NX-OS software.

The following table lists the changes to this document.

Date	Description
August 31, 2017	Created the Cisco Nexus 3000 Series EPLD release notes for Release 7.0(3)I7(1).

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Introduction

The Cisco Nexus 3000 Series NX-OS mode switches that run Cisco Nexus 9000 Series NX-OS software 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 a line card 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 In Service Software Upgrade (ISSU) process, which upgrades the system image 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 the EPLD images from https://software.cisco.com/download/navigator.html.

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 ISSU upgrade is a nondisruptive upgrade.

NOTE: Do not perform an EPLD upgrade during an ISSU system upgrade.

Switch Requirements

The Cisco Nexus 3000 Series switch must be running the Cisco NX-OS operating.

You must have administrator privileges to work with the Cisco Nexus 3000 Series switch.

EPLD Upgrades Available for NX-OS Mode Releases 7.0(3)I5(1) through 7.0(3)I7(1)

Each EPLD image that you can download from https://software.cisco.com/download/navigator.html is a bundle of EPLD upgrades. To see the recent updated EPLD versions for the Cisco Nexus 3000 Series switches running Cisco Nexus 9000 NX-OS software, see the following table.

NOTE: All updates to an image are shown in boldface. If more than one release is shown for a column, the boldface applies to the first release listed for the column.

Available EPLD Images for the Cisco Nexus 3000 Series Switches

Component	EPLD Device	Release 7.0(3)I5(1)	Release 7.0(3)I5(2)	Release 7.0(3)I6(1)	Release 7.0(3)I7(1)
Cisco Nexus 31108PC-V (N3K-C31108PC-V)	IOFPGA	**0x5 (0.005)**	0x5 (0.005)	0x5 (0.005)	0x5 (0.005)

	MIFPGA	0x3 (0.003)	0x3 (0.003)	0x3 (0.003)	0x3 (0.003)
Cisco Nexus 31108TC-V (N3K-C31108TC-V)	IOFPGA	**0x5 (0.005)**	0x5 (0.005)	0x5 (0.005)	0x5 (0.005)
	MIFPGA	**0x3 (0.003)**	0x3 (0.003)	0x3 (0.003)	0x3 (0.003)
Cisco Nexus 31128PQ-10GE CPU (N3K-C31128PQ-10GE)	IOFPGA	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)	0x6 (0.006)
	MIFPGA	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)
Cisco Nexus 31128PQ-10GE I/O (N3K-C31128PQ-10GE)	MIFPGA	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)	0x4 (0.004)
Cisco Nexus 3164Q (N3K-C3164Q)	IOFPGA	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)	0x7 (0.007)
	MIFPGA	0x24 (0.036)	0x24 (0.036)	**0x25 (0.037)**	0x25 (0.037)
Cisco Nexus 3232C (N3K-C3232C)	IOFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)
	MIFPGA	0x12 (0.018)	0x12 (0.018)	0x12 (0.018)	0x12 (0.018)
Cisco Nexus 3264Q-S (N3K-C3264Q-S)	IOFPGA	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)
	MIFPGA0	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)	0x9 (0.009)
	MIFPGA1	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)	0x10 (0.016)

Determining Whether to Upgrade EPLD Images

To determine which devices need upgraded EPLDs, use the **show install impact epld bootflash:** command for a device and indicate the latest EPLD image file (n9000-epld.7.0.3.I7.1.img). The output for 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.

- To determine the EPLD upgrades needed for a Cisco Nexus 3000 Series switch, use the **show install impact epld bootflash:** command on that switch and indicate the n9000-epld.7.0.3.I7.1 image. In the following example, the MIFPGA and IOFPGA EPLD images do not need to be upgraded.

```
switch# show install all impact epld n9000-epld.7.0.3.I7.1.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                   0x23        0x23             No
     1   SUP  IO FPGA                   0x06        0x06             No
     1   SUP  MI FPGA2                  0x23        0x23             No
```

Downloading the EPLD Images

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

Procedure

Step 1 From a browser, go to https://software.cisco.com/download/navigator.html.

The browser will display the Cisco website.

Step 2 Choose **Switches**.

A list of switch types displays on the right.

Step 3 Select **Data Center Switches**.

The right side lists the Data Center Switch product series.

Step 4 Select **Cisco Nexus 3000**.

The right side lists the switches in the series that you selected.

Step 5 Select the switch that you are updating EPLD images for.

The Downloads page opens and lists what you can download for the switch that you selected.

Step 6 Select **NX-OS EPLD Updates**.

The Download Software page lists the available EPLD images for the switch.

Step 7 If you see a new EPLD image for the NX-OS software installed on the switch, click the **Download** button.

CAUTION: Do not install EPLD images for a release later than the installed release. The Cisco Nexus 3000 and 9000 Series switches support only the images for the current or earlier releases.The Downloads page lists the software types that can be downloaded for the switch that you specified.

Step 8 Click the link for the file.

The Downloads page displays a Download button and lists information for the file.

Step 9 Click **Download**.

The Supporting Documents page opens to display the rules for downloading the software.

Step 10 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 11 Click **Save**.

The Save As dialog box appears.

Step 12 Indicate where to save the file and click **Save**.

The file saves to the location that you specified.

What to Do Next

You are ready to prepare the EPLD images for Installation.

Installation Guidelines

To upgrade the EPLD images using CLI commands, follow these guidelines:

- Before you upgrade any EPLD images, be sure that you have updated the Cisco NX-OS operating system to the level required for the images and be sure that you have an EPLD image file.

  CAUTION: Do not install EPLD images for a release later than the installed release (the EPLD image number must be the same as the number for the installed software release or it must be an earlier release number). The Cisco Nexus 3000 and 9000 Series switches support only the images for the current or earlier releases.

- If you interrupt an upgrade, you must reapply the upgrade to the switch that was being upgraded during the interruption.

- The upgrade process disrupts traffic on the targeted switch.

- Do not insert or remove any modules while an EPLD upgrade is in progress.

Step 1 Copy the EPLD image file 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 bootflash:n9000-dk9.7.0.3.I7.1.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.I7.1.bin** command.

Step 6 Enter the **install epld bootflash:n9000-epld.7.0.3.I7.1.img module all** command.

The switch automatically reboots.

Upgrading the EPLD Images

CAUTION: Do not install EPLD images for a release later than the installed release. The Cisco Nexus 3000 Series switches support only the images for the current or earlier releases.

Procedure

Verifying the EPLD Upgrades

To verify the EPLD upgrades for a switch or its modules, use the **show version module *slot-number* epld** command as follows:

- To verify updates for a top-of-rack switch, use 1 for *slot-number*.
  `switch# show version module 1 epld`

Displaying the Status of EPLD Upgrades

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

Related Documentation

The entire Cisco NX-OS 3000 Series 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

Release Notes

The release notes are available at the following URL:
https://www.cisco.com/en/US/products/ps13386/prod_release_notes_list.html

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