

FPGA/EPLD Upgrade Note for Cisco Prime NAM-NX1, 6.0

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This note provides information on the FPGA image upgrade procedure for Cisco Nexus 7000 Series Network Analysis Module, Release 6.0(1) and 6.0(2).

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Introduction

The Cisco Nexus 7000 Series NAM (NAM-NX1) is a member of the Cisco Prime NAM product family and a component of Cisco Nexus 7000 Series. The Cisco Nexus 7000 Series switches contain several programmable logical devices (PLDs) that provide hardware functionalities in all modules. PLDs include electronic programmable logic devices (EPLDs), field programmable gate arrays (FPGAs), and complex programmable logic devices (CPLDs), but they do not include ASICs. With regards to NAM-NX1, the term FPGA is used in this document.

The advantage of having FPGAs for some module functions is that when you need to upgrade those functions, you just upgrade their software images instead of replacing their hardware. To take advantage of some of the Cisco Nexus 7000 Series NAM-NX1 functionality, you need to upgrade the FPGA image in your Cisco Nexus 7000 Series NAM-NX1.

Upgrade Summary

This note will help you answer:

- What FPGA image version is the NAM running?
- What is the NAM module version?
- Where do I download the latest FPGA image?
- How do I upgrade the latest FPGA image on the NAM?
- How do I verify the upgrade?



The following summary provides links to the tasks that you may need to perform as part of your FPGA installation:

- Determine Whether to Upgrade Your FPGA Image
- Upgrade the NAM FPGA Image for NAM-NX1

Determine Whether to Upgrade Your FPGA Image

FPGA 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 switch performs FPGA image upgrades on one module at a time, so at any one time the upgrade disrupts only the traffic going through one module.

Cisco does not provide upgrade FPGA images very frequently, and you do not have to upgrade your FPGA images unless they fix the functions for the hardware that you are using in your Cisco Nexus 7000 Series switch. The FPGA image upgrades are independent from the Cisco NX-OS In Service Software Upgrade (ISSU) process, which upgrades the system and kickstart images with no impact on the network environment.

When Cisco makes an FPGA image upgrade available, the Cisco 7000 Series FPGA/EPLD Release Notes announce their availability, and you can download them from <http://www.cisco.com>.

You do not always need to upgrade FPGA images; however, when new FPGA 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.

You can use your switch or your NAM-NX1 service modules to collect data to determine if you need to upgrade your NAM-NX1 FPGA image. From your switch:

1. To identify the version of the NAM software on the switch, use the **show module** or **show module # version / show analysis module <#> version**
2. Use **show install module <module#> impact epld bootflash:filename** to display the NAM-NX1's current FPGA version, and the latest FPGA image version.

```
yournam# show mod 5
Mod  Ports  Module-Type          Model          Status
---  ---
5    4        Network Analysis Module NAM-NX1  0-SM-APP      ok

Mod  Sw          Hw
---  ---
5    6.2(2)     0.500

Mod      Application Image Description      Application Image Version      Status
-----
5        Application linecard image      6.0(2)                          ok

Mod  MAC-Address(es)          Serial-Num
---  ---
5    84-79-ac-0c-79-4e to 84-79-ac-0c-79-57  JAF1000AEAG

Mod  Online Diag Status
---  ---
5    Pass
```

Chassis Ejector Support: Enabled

Ejector Status:

Left ejector CLOSE, Right ejector CLOSE, Module HW does support ejector based shutdown, Ejector policy enabled.

your-nam# show analysis module 5 version

App software version **6.0(2)**

your-nam# show install module 5 impact **epld** bootflash:n7000-s1-epld.6.2.5.FH.0.66.gimg

Retrieving EPLD versions... Please wait.

Images will be upgraded according to following table.

Module	Type	EPLD	Running-Version	New-Version	Upg-Required
5	LC	Power Manager	2.008	2.008	No
5	LC	IO	2.003	2.003	No
5	LC	DPFPGA-0	0.005	0.062	Yes
5	LC	DPFPGA-1	0.005	0.062	Yes
5	LC	IO-2	3.001	3.001	No

The NAM versions are highlighted in the table.

Upgrade the NAM FPGA Image for NAM-NX1

For NAM-NX1 users, when installing a new NAM-NX1 FPGA image with any supported supervisor card, the switch is in disruptive mode. For details on when to perform FPGA image upgrade on an NX-OS switch, see the NX-OS release guide.

During the FPGA upgrade, the NAM-NX1 is held in down state. The NAM 6.0(2) image includes a separate FPGA image that you can upgrade independently from the NX-OS software upgrade.

The FPGA image must be downloaded to the switch's bootflash. Remote upgrading from FTP or TFTP is not supported.

Detailed Steps

Step 1 If you have a Cisco.com login, you can obtain the FPGA image from the following website:

<http://software.cisco.com/download/release.html?mdfid=283748960&flowid=28583&softwareid=282253564&release=6.2%286%29&releind=AVAILABLE&rellifecycle=&reltype=latest>

Step 2 Download the FPGA image package to the switch bootflash.

See the switch documentation for more information about downloading files to bootflash.

Step 3 Upgrade using the command: **install all epld bootflash:<epld-image> parallel module <module#>** command.

During the upgrade, the user is prompted twice with the question: **Do you want to continue (y/n)**. Please enter **y** to continue. The NAM-NX1 will be held in down state for about 1 hour 30 minutes. After upgrade, the NAM-NX1 will reboot online with the new FPGA image.

your-nam # install all **epld** bootflash:n7000-s1-epld.6.2.5.FH.0.66.img parallel module 5

WARNING: Executing the "install all epld" command may result in multiple modules going offline and affect redundant links.

It is strongly recommended to use one of the following when an FPGA image upgrade is attempted on a system carrying production traffic.

- 1) "install module <mod#> epld"
- 2) "install all epld <uri> parallel module <mod#>"
 where <mod#> is on a single module

For FPGA/EPLD upgrade best practices, see http://www.cisco.com/en/US/docs/switches/datacenter/sw/best_practices/cli_mgmt_guide/epld_upgrade.html.

Do you want to continue (y/n) ? [y]

Compatibility check:

Module	Type	Upgradable	Impact	Reason
5	LC	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
5	LC	Power Manager	2.008	2.008	No
5	LC	IO	2.003	2.003	No
5	LC	DPFPGA-0	0.005	0.062	Yes
5	LC	DPFPGA-1	0.005	0.062	Yes
5	LC	IO-2	3.001	3.001	No

The above modules require upgrade.

This upgrade will take up to 1 hour 30 minutes if LC DPFPGA-0/1 listed above requires upgrade.

Do you want to continue (y/n) ? [y]

Starting Module 5 EPLD Upgrade

```
Module 5 : DPFPGA-0 [Upgrade Started ]
Module 5 : DPFPGA-0 [Erasing          ] : 100.00%
Module 5 : DPFPGA-0 [Programming      ] : 100.00% (68091048 of 68091048 total bytes)
Module 5 : DPFPGA-1 [Upgrade Started ]
Module 5 : DPFPGA-1 [Erasing          ] : 100.00%
Module 5 : DPFPGA-1 [Programming      ] : 100.00% (68091048 of 68091048 total bytes)
```

Module 5 Upgrade Done.

Waiting for Module 5 to come online.
 Module 5 EPLD upgrade is successful.

```
EPLD Upgrade Completed.
Module      Type  Upgrade-Result
-----
5           LC      Success
```

Step 6 Verify that the FPGA upgrade was successful using one of the following commands:

```
Router# show version module <module#> epld
```

Related Documentation

- [Cisco Nexus 7000 Series FPGA/EPLD Upgrade Release Notes, Release 6.2](#)
- [Cisco Nexus 7000 Series Network Analysis Module \(NAM-NX1\) Quick Start Guide Release Notes for Cisco Prime Network Analysis Module 6.0](#)

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>.

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