



CHAPTER 6

Managing the Switch Hardware

This chapter describes how to manage the switch hardware, which includes the fabric and I/O modules, and it provides information on how to monitor system and module states. This chapter includes the following sections:

- [Displaying the Switch Hardware Inventory, page 6-1](#)
- [Displaying the Switch Serial Number, page 6-5](#)
- [Displaying Power Usage Information, page 6-7](#)
- [Power Supply Configuration Modes, page 6-8](#)
- [Information About Modules, page 6-14](#)
- [Verifying the Status of a Module, page 6-15](#)
- [Checking the State of a Module, page 6-16](#)
- [Connecting to a Module, page 6-17](#)
- [Shutting Down Modules, page 6-17](#)
- [Information About Module Temperature, page 6-18](#)
- [Displaying Environment Information, page 6-20](#)
- [Reloading Modules, page 6-21](#)
- [Saving the Module Configuration, page 6-22](#)
- [Purging the Module Configuration, page 6-23](#)
- [Powering Off I/O Modules, page 6-23](#)
- [Information About Fan Trays, page 6-24](#)
- [EPLD Configuration, page 6-25](#)
- [Default Settings, page 6-42](#)

Displaying the Switch Hardware Inventory

You can display information about the field replaceable units (FRUs), including product IDs, serial numbers, and version IDs by entering the **show inventory** command. See [Example 6-1](#).

Send document comments to nexus7k-docfeedback@cisco.com

Example 6-1 Displaying the Hardware Inventory

```
switch# show inventory
NAME: "Chassis",  DESCR: "Nexus7000 C7010 (10 Slot) Chassis "
PID: N7K-C7010      ,  VID: V01 ,  SN: TBM11493268

NAME: "Slot 1",  DESCR: "10 Gbps Ethernet Module"
PID: N7K-M132XP-12 ,  VID: V01 ,  SN: JAB1152010E

NAME: "Slot 2",  DESCR: "10 Gbps Ethernet Module"
PID: N7K-M132XP-12 ,  VID: V01 ,  SN: JAB120101QA

NAME: "Slot 5",  DESCR: "Supervisor module-1X"
PID: N7K-SUP1      ,  VID:      ,  SN: JAB115200YJ

NAME: "Slot 11", DESCR: "Fabric card module"
PID: N7K-C7010-FAB-1 ,  VID:      ,  SN: JAB1152012J

NAME: "Slot 12", DESCR: "Fabric card module"
PID: N7K-C7010-FAB-1 ,  VID:      ,  SN: JAB114800U5

NAME: "Slot 33", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Power Supply"
PID: N7K-AC-6.0KW   ,  VID: V01 ,  SN: DTH1205T002

NAME: "Slot 34", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Power Supply"
PID: N7K-AC-6.0KW   ,  VID: V01 ,  SN: DTH1205T006

NAME: "Slot 36", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Fan Module"
PID: N7K-C7010-FAN-S ,  VID: V01 ,  SN: NWG114906HP

NAME: "Slot 37", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Fan Module"
PID: N7K-C7010-FAN-S ,  VID: V01 ,  SN: NWG114906G9

NAME: "Slot 38", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Fan Module"
PID: N7K-C7010-FAN-F ,  VID: V01 ,  SN: NWG114906N8

NAME: "Slot 39", DESCR: "Nexus7000 C7010 (10 Slot) Chassis Fan Module"
PID: N7K-C7010-FAN-F ,  VID: V01 ,  SN: NWG114906MC
```

To display switch hardware inventory details, enter the **show hardware** command. See [Example 6-2](#).

Example 6-2 Displaying Hardware Information

```
switch# show hardware
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.

Software
  BIOS:          version 3.11.0
  loader:        version N/A
  kickstart:     version 4.0(1) [build 4.0(0.855)] [gdb]
  system:        version 4.0(1) [build 4.0(0.855)] [gdb]
  BIOS compile time: 10/15/07
  kickstart image file is: bootflash:/ks855.S7
  kickstart compile time: 10/12/2020 25:00:00 [02/02/2008 01:38:41]
  system image file is: bootflash:/is855.S7
  system compile time: 1/27/2008 14:00:00 [02/02/2008 02:21:24]
```

Send document comments to nexus7k-docfeedback@cisco.com

```
Hardware
  cisco Nexus7000 C7010 (10 Slot) Chassis ("Supervisor module-1X")
  Intel(R) Xeon(R) CPU          with 4136544 kB of memory.
  Processor Board ID JAB115200YJ

  bootflash:      2030616 kB
  slot0:          0 kB (expansion flash)

switch Kernel uptime is 1 day(s), 3 hour(s), 17 minute(s), 12 second(s)

Last reset
  Reason: Unknown
  System version: 4.0(0.855)
  Service:

plugin
  Core Plugin, Ethernet Plugin

CMP
  Is not online
-----
Switch hardware ID information
-----

Switch is booted up
  Switch type is : Nexus7000 C7010 (10 Slot) Chassis
  Model number is N7K-C7010
  H/W version is 0.406
  Part Number is 73-10900-04
  Part Revision is 06
  Manufacture Date is Year 11 Week 49
  Serial number is TBM11493268
  CLEI code is 0

-----
Chassis has 10 Module slots and 5 Fabric slots
-----

Module1 ok
  Module type is : 10 Gbps Ethernet Module
  2 submodules are present
  Model number is N7K-M132XP-12
  H/W version is 0.601
  Part Number is 73-10899-06
  Part Revision is 13
  Manufacture Date is Year 11 Week 52
  Serial number is JAB1152010E
  CLEI code is 0

Module2 ok
  Module type is : 10 Gbps Ethernet Module
  2 submodules are present
  Model number is N7K-M132XP-12
  H/W version is 0.601
  Part Number is 73-10899-06
  Part Revision is 13
  Manufacture Date is Year 12 Week 1
  Serial number is JAB120101QA
  CLEI code is 0

Module3 empty
```

Send document comments to nexus7k-docfeedback@cisco.com

```

Module4 empty

Module5 ok
  Module type is : Supervisor module-1X
  0 submodules are present
  Model number is N7K-SUP1
  H/W version is 0.901
  Part Number is 73-10877-09
  Part Revision is 10
  Manufacture Date is Year 11 Week 52
  Serial number is JAB115200YJ
  CLEI code is

Module6 empty

Module7 empty

Module8 empty

Module9 empty

Module10 empty

Xbar1 ok
  Module type is : Fabric card module
  0 submodules are present
  Model number is N7K-C7010-FAB-1
  H/W version is 0.405
  Part Number is 73-10624-04
  Part Revision is 14
  Manufacture Date is Year 11 Week 52
  Serial number is JAB1152012J
  CLEI code is

Xbar2 ok
  Module type is : Fabric card module
  0 submodules are present
  Model number is N7K-C7010-FAB-1
  H/W version is 0.404
  Part Number is 73-10624-04
  Part Revision is 11
  Manufacture Date is Year 11 Week 48
  Serial number is JAB114800U5
  CLEI code is

Xbar3 empty

Xbar4 empty

Xbar5 empty

-----
Chassis has 3 PowerSupply Slots
-----

PS1 ok
  Power supply type is: 6000.00W 220v AC
  Model number is N7K-AC-6.0KW
  H/W version is 1.0
  Part Number is 341-0230-02
  Part Revision is A0
  Manufacture Date is Year 12 Week 5
  Serial number is DTH1205T002
  CLEI code is IPUPADBAAA

```

Send document comments to nexus7k-docfeedback@cisco.com

```
PS2 ok
  Power supply type is: 6000.00W 220v AC
  Model number is N7K-AC-6.0KW
  H/W version is 1.0
  Part Number is 341-0230-02
  Part Revision is A0
  Manufacture Date is Year 12 Week 5
  Serial number is DTH1205T006
  CLEI code is IPUPADBAAA
```

```
PS3 absent
```

```
-----
Chassis has 4 Fan slots
-----
```

```
Fan1 ok
  Model number is N7K-C7010-FAN-S
  H/W version is 0.410
  Part Number is 73-10741-04
  Part Revision is 10
  Manufacture Date is Year 11 Week 49
  Serial number is NWG114906HP
  CLEI code is
```

```
Fan2 ok
  Model number is N7K-C7010-FAN-S
  H/W version is 0.410
  Part Number is 73-10741-04
  Part Revision is 10
  Manufacture Date is Year 11 Week 49
  Serial number is NWG114906G9
  CLEI code is
```

```
Fan3 ok
  Model number is N7K-C7010-FAN-F
  H/W version is 0.209
  Part Number is 73-10967-02
  Part Revision is 09
  Manufacture Date is Year 11 Week 49
  Serial number is NWG114906N8
  CLEI code is
```

```
Fan4 ok
  Model number is N7K-C7010-FAN-F
  H/W version is 0.209
  Part Number is 73-10967-02
  Part Revision is 09
  Manufacture Date is Year 11 Week 49
  Serial number is NWG114906MC
  CLEI code is
```

```
switch#
```

Displaying the Switch Serial Number

The serial number of your Cisco Nexus 7000 Series switch can be obtained by looking at the serial number label on the back of the switch (next to the power supply), or by entering the **show srom backplane 1** command. See [Example 6-3](#).

Send document comments to nexus7k-docfeedback@cisco.com

```

00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00
00 00
License software-module specific block:
Block Signature : 0x6006
Block Version   : 1
Block Length    : 16
Block Checksum  : 0x77
lic usage bits:
00 00 00 00 00 00 00 00
Second Serial number specific block:
Block Signature : 0x6007
Block Version   : 1
Block Length    : 28
Block Checksum  : 0x312
Serial Number   : TBM11476798
switch#

```

Displaying Power Usage Information

To display the actual power usage information for the entire switch, use the **show environment power** command. See [Example 6-4](#).



Note

In a Cisco Nexus 7000 Series switch, power usage is reserved for both supervisor modules regardless of whether one or both supervisor modules are present.

Example 6-4 Displaying Power Management Information

```
switch# show environment power
```

```
Power Supply:
Voltage: 50 Volts
```

PS	Model	Power (Watts)	Power (Amp)	Status
1	N7K-AC-6.0KW	3000.00	60.00	Ok
2	N7K-AC-6.0KW	3000.00	60.00	Ok
3	N7K-AC-6.0KW	0.00	0.00	Shutdown

Mod	Model	Power Requested (Watts)	Power Requested (Amp)	Power Allocated (Watts)	Power Allocated (Amp)	Status
1	N7K-M132XP-12	773.50	15.47	773.50	15.47	Powered-Up

Send document comments to nexus7k-docfeedback@cisco.com

2	N7K-M132XP-11	423.50	8.47	423.50	8.47	Powered-Up
5	N7K-SUP1	210.00	4.20	210.00	4.20	Powered-Up
6	N7K-SUP1	210.00	4.20	210.00	4.20	Powered-Up
Xb1	N7K-C7010-FAB-1	60.00	1.20	60.00	1.20	Powered-Up
Xb2	N7K-C7010-FAB-1	60.00	1.20	60.00	1.20	Powered-Up

Power Usage Summary:

Power Supply redundancy mode: PS-Redundant
Power Supply redundancy operational mode: Non-Redundant

Total Power Capacity 12000.00 W

Power reserved for Supervisor(s) 420.00 W
Power reserved for Fan Module(s) 2184.00 W
Power reserved for Fabric Module(s) 300.00 W
Power currently used by Modules 1197.00 W

Total Power Available 7899.00 W

switch#

Power Supply Configuration Modes

This section includes the following topics:

- [Power Supply Configuration Overview, page 6-8](#)
- [Power Supply Configuration Guidelines, page 6-11](#)

Power Supply Configuration Overview

You can configure one of the following power modes to either use all of the available power provided by the installed power supply units or to provide power redundancy when there is a power loss:

- **Combined mode**—Provides the maximum amount of available power by utilizing the combined power output from all installed power supply units for switch operations. This mode does not provide redundancy.
- **Power-supply redundancy mode**—Allows you to replace a power supply during switch operations. All power supply units are active. The available power is calculated as the least amount of power available from all but one of the power supply units (N+1). The reserve power is the amount of power output by the power supply that can output the most power. For example, if three power supply units output 3 kW, 6 kW, and 6 kW, the available power is 9 kW (3 kW + 6 kW) and the reserve power is 6 kW.
- **Input source redundancy mode**—Takes power from two electrical grids so that if one grid goes down, the other grid can provide the power needed by the switch. Each grid powers half of each power supply (grid A is connected to the Input 1 receptacle on each power supply and grid B is connected to the Input 2 receptacle on each power supply). The available power is the amount of power output by the portions of power supply units connected to the same grid. For example, if three power supply units are connected to a 110-V grid and a 220-V grid, each power supply outputs 1.2 kW for the 110-V grid and 3.0 kW for the 220-V grid. The available power would be 3.6 kW (1.2 kW + 1.2 kW + 1.2 kW) and the reserve power would be 9.0 kW (3.0 kW + 3.0 kW + 3.0 kW).

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

- Full redundancy mode—Provides both power-supply redundancy and input-source redundancy. This mode lets you replace a power supply without interrupting system operations or continue powering the switch if one of two grids goes down. The available power is the lesser amount of output power for power supply redundancy or input source redundancy.

To determine the amount of available power for 6-kW power supply units in each power mode, see [Table 6-1](#). To determine the amount of available power for 7.5-kW power supply units, see [Table 6-2](#).

Table 6-1 Power Availability for 6-kW Power Supply Units

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply unit				
220-V and 220-V inputs				
1 power supply	6000 W	—	3000 W	—
2 power supply units	12,000 W	6000 W	6000 W	6000 W
3 power supply units	18,000 W	12,000 W	9000 W	9000 W
220-V and 110-V inputs				
1 power supply	4200 W	—	1200 W	—
2 power supply units	8400 W	4200 W	2400 W	2400 W
3 power supply units	12,600 W	8400 W	3600 W	3600 W
110-V and 110-V inputs				
1 power supply	2400 W	—	1200 W	—
2 power supply units	4800 W	2400 W	2400 W	2400 W
3 power supply units	7200 W	4800 W	3600 W	3600 W
Single inputs per power supply unit				
220-V input				
1 power supply	3000 W	—	—	—
2 power supply units	6000 W	3000 W	—	—
3 power supply units	9000 W	6000 W	—	—
110-V input				
1 power supply	1200 W	—	—	—
2 power supply units	2400 W	1200 W	—	—
3 power supply units	3600 W	2400 W	—	—

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Table 6-2 Power Availability for 7.5-kW Power Supply Units

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply unit				
220-V and 220-V inputs				
1 power supply unit	7500 W	—	3750 W	—
2 power supply units	15,000 W	7500 W	7500 W	7500 W
3 power supply units	22,500 W	15,000 W	11,250 W	11,250 W
4 power supply units	30,000 W	22,500 W	15,000 W	15,000 W
Single input per power supply unit				
220-V input				
1 power supply unit	3750 W	—	—	—
2 power supply units	7500 W	3750 W	—	—
3 power supply units	11,250 W	7500 W	—	—
4 power supply units	15,000 W	11,250 W	—	—

Configuring the Power Supply Mode

SUMMARY STEPS

1. `config t`
2. `power redundancy-mode mode`

DETAILED STEPS

	Command	Purpose
Step 1	<pre><code>config t</code></pre> <p>Example:</p> <pre><code>switch# config t</code> <code>switch(config)#</code></pre>	Enters configuration mode.
Step 2	<pre><code>power redundancy-mode</code> <code>combined ps-redundant insrc-redundant </code> <code>redundant</code></pre> <p>Example:</p> <pre><code>switch(config)# power redundancy-mode</code> <code>redundant</code> <code>switch(config)#</code></pre>	Configures one of the following power supply modes: <ul style="list-style-type: none"> • For combined mode, use the combined keyword. • For power supply redundancy, use the ps-redundant keyword. • For input source redundancy, use the insrc-redundant keyword. • For full redundancy, use the redundant keyword.

Send document comments to nexus7k-docfeedback@cisco.com



Note

To display the current power supply configuration, use the **show environment power** command.

Power Supply Configuration Guidelines

Follow these guidelines when configuring power supply units:

- When power supply units with different capacities are installed in the switch, the amount of available power differs based on one of the following configuration modes:
 - Combined mode—To activate this mode, use the **power redundancy-mode combined** command. If the combined power provided by all of the installed power supply units meets the power requirements of all of the switch modules, then this mode is sufficient for running your switch.

For example, suppose your system has the following setup:

Power supply unit 1 outputs 6 kW.

The switch power requirement is 8.784 kW.

The following two scenarios explain what happens for different numbers of power supply units that you install:

Scenario 1: If you do not add a power supply unit, the available power (6 kW) is insufficient for the switch power requirement, so the switch powers the supervisor modules, fabric modules, and fan trays, before powering as many I/O modules as the remaining available power can support (one or more I/O modules might not be powered).

Scenario 2: If you install an additional power supply unit that can output 3 kW, the available power becomes 9.0 kW. The increased amount of available power exceeds the switch power requirement, so all of the modules and fan trays in the switch can power up.

Table 6-3 shows the results for each scenario.

Table 6-3 Combined Power Mode Scenarios

Scenario	Power Supply 1 (kW)	Power Supply 2 (kW)	System Usage (kW)	Available Power (kW)	Result
1	6.0	—	8.784	6.0	Available power is less than system usage, so you cannot power the entire system with this mode.
2	6.0	3.0	8.784	9.0	Available power exceeds the system usage, so you can use this mode to power your entire system.

- Power supply redundancy mode—To activate this power mode, use the **power redundancy-mode ps-redundant** command. The power supply unit that outputs the most power provides the reserve power, and the combined output for the other power supply units becomes the available power.

For example, suppose your system has the following setup:

Send document comments to nexus7k-docfeedback@cisco.com

Power supply unit 1 outputs 3.0 kW.
Power supply unit 2 outputs 6.0 kW.
The switch power requirement is 8.784 kW.

The following three scenarios explain what happens depending on what you install for the third power supply unit:

Scenario 1: If you do not add a third power supply unit, the reserve power is 6 kW and the available power is 3 kW. The available power is insufficient for the switch power requirement, so you cannot power the entire switch.

Scenario 2: If you add a power supply unit that outputs 3 kW, the reserve power remains 6 kW and available power becomes 6 kW. The available power is still insufficient because it does not meet the switch power requirement, so you can power more modules than you could with Scenario 1, but you still cannot power the entire switch.

Scenario 3: If you add a power supply unit that outputs 7.5 kW, the reserve power becomes 7.5 kW and the available power becomes 9 kW. The available power exceeds the switch power requirement, so you can power up all of the modules and fan trays in the switch.

Table 6-4 shows the results for each scenario.

Table 6-4 Power Supply Redundancy Mode Scenarios

Scenario	Power Supply 1 (kW)	Power Supply 2 (kW)	Power Supply 3 (kW)	System Usage (kW)	Available Power (kW)	Reserve Power (kW)	Result
1	3.0	6.0	—	8.784	6.0	—	The available power does not meet the system usage requirement, so you cannot power the entire system with this power supply configuration and mode.
2	3.0	6.0	3.0	8.784	6.0	6.0	The available power does not meet the system usage, so you cannot power the entire system with this power supply configuration and mode.
3	3.0	6.0	7.5	8.784	9.0	7.5	The available power exceeds the system usage, so you can power the entire system with this power supply configuration and mode.

- Input source redundancy mode—To activate this power mode, use the **power redundancy-mode insrc_redundant** command. The reserve power is the greater of power outputs for the two grids, and the available power becomes the lesser of power outputs for the two grids.

For example, suppose your system has the following setup:

Grids 1 and 2 each input 220 V to the power supply units.

Power supply units 1 and 2 each output 6 kW.

Current usage requirement is 8.784 kW.

Then the following three scenarios explain what happens for different numbers of power supply units that you install:

Scenario 1: If you do not add a power supply unit, the reserve power is 6 kW (3 kW for one power supply unit and 3 kW for the other power supply unit), and the available power is 6 kW (3 kW for one power supply unit plus 3 kW for the other power supply unit). The available power does not meet the switch usage requirement, so you cannot power the entire switch.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Scenario 2: If you add a power supply that outputs 3 kW, the reserve power is 9 kW (3 kW for three power supply units), and the available power is 6 kW (3 kW for each of two power supply units). The available power does not meet the system usage requirement, so you cannot power the entire switch.

Scenario 3: If you add a power supply unit that outputs 7.5 kW, the reserve power is 9.75 kW (3 kW for two power supply units and 3.75 kW for the new power supply unit), and the available power is 9.75 kW (3 kW for two power supply units and 3.75 kW for the new power supply unit). The available power exceeds the switch usage requirement, so you can power up all of the modules and fan trays in the switch.

Table 6-5 shows the results for each scenario.

Table 6-5 Input Source Redundancy Mode Scenarios

Scenario	Power Supply 1 (kW)	Power Supply 2 (kW)	Power Supply 3 (kW)	System Usage (kW)	Available Power (kW)	Reserve Power (kW)	Result
1	6.0	6.0	-	8.784	6.0	6.0	Available power (the power supply output for either grid) does not meet the system usage requirement.
2	6.0	6.0	3.0	8.784	9.0	6.0	The power supply output for one grid meets the system usage requirement, but the power supply output for the other grid does not meet the system usage requirement.
3	6.0	6.0	7.5	8.784	9.75	9.75	The power supply output for both grids meet the system usage requirement.

- Full redundancy mode—To activate this power mode, use the **power redundancy -mode redundant** command. The reserve power is the greater amount of reserve power for power supply redundancy and input source redundancy, and the available power is the lesser amount of available power for the same two redundancy modes.

For example, suppose your system has the following setup:

Grids A and B each provide 220 V.

Power supply units 1 and 2 each output 6.0 kW.

Switch usage requirement is 8.784 kW.

Then the following three scenarios explain what happens for different numbers of power supply units that you install:

Scenario 1: If you do not add a power supply unit, the reserve power is 6 kW and the available power is 6 kW. The available power does not meet the switch usage requirement, so you cannot power up the entire switch.

Scenario 2: If you add a 3-kW power supply unit, the reserve power is 9 kW (3 kW for three power supply units on one grid), and the available power is 6 kW (3 kW for two power supply units on a second grid). The available power does not meet the switch usage requirement, so you cannot power up the entire switch.

Scenario 3: If you add a 6-kW power supply unit, the reserve power is 9 kW (3 kW for three power supply units on the same grid), and the available power is 9 kW (3 kW for three power supply units on a second grid). The available power meets the switch usage requirements, so you can power up the entire switch.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Table 6-6 shows the results for each scenario.

Table 6-6 Full Redundancy Mode Scenarios

Scenario	Power Supply 1 (kW)	Power Supply 2 (kW)	Power Supply 3 (kW)	System Usage (kW)	Input Source Mode		Power Supply Mode		Result
					Available Power (kW)	Reserve Power (kW)	Available Power (kW)	Reserve Power (kW)	
1	6.0	6.0	—	8.784	6.0	6.0	6.0	6.0	Available power does not meet the switch usage requirement.
2	6.0	6.0	3.0	8.784	6.0	9.0	9.0	6.0	Available power for the power supply mode is sufficient but the available power for the input source mode is insufficient, so the available power does not meet the switch usage requirement.
3	6.0	6.0	6.0	8.784	9.0	9.0	12.0	6.0	Available power for both modes meets the switch usage requirement, so you can power up the entire switch.

Information About Modules

The following sections explain how you can manage operations for the switch modules:

- [Supervisor Modules, page 6-14](#)
- [I/O Modules, page 6-15](#)
- [Fabric Modules, page 6-15](#)

Supervisor Modules

The Cisco Nexus 7010 switch has one or two supervisor modules. When it has two supervisors, one supervisor is automatically active while the other is in standby mode. If the active supervisor goes down or is disconnected for replacement, the standby supervisor automatically becomes active. To understand the terms used for the supervisors, see [Table 6-7](#).

Supervisor modules are automatically powered up and started with the switch.

Table 6-7 Supervisor Module Terms and Usage in Console Displays

Module Terms	Fixed or Relative	Usage
module-5 and module-6	Fixed usage	module-5 always refers to the supervisor module in slot 5 and module-6 always refers to the supervisor module in slot 6.
sup-1 and sup-2	Fixed usage	sup-1 always refers to the supervisor module in slot 5 and sub-2 always refers to the supervisor module in slot 6.

Send document comments to nexus7k-docfeedback@cisco.com

Table 6-7 Supervisor Module Terms and Usage in Console Displays (continued)

Module Terms	Fixed or Relative	Usage
sup-active and sup-standby	Relative usage	sup-active refers to the active supervisor module—relative to the slot that contains the active supervisor module. sup-standby refers to the standby supervisor module—relative to the slot that contains the standby supervisor module.
sup-local and sup-remote	Relative usage	If you are logged into the active supervisor, sup-local refers to the active supervisor module and sup-remote refers to the standby supervisor module. If you are logged into the standby supervisor, sup-local refers to the standby supervisor module (the one that you are logged into.) There is no sup-remote available from the standby supervisor module (you cannot access a file system on the active supervisor).

I/O Modules

Cisco Nexus 7000 Series switches support the following I/O modules in slots 1 through 4 and 7 through 10:

- 48-port 10/100/1000 Ethernet module
- 48-port 1 Gigabit Ethernet module
- 32-port 10 Gigabit Ethernet module

Fabric Modules

Cisco Nexus 7000 Series switches support up to five fabric modules in the back of the chassis.

Verifying the Status of a Module

Before you begin configuring the switch, you need to ensure that the modules in the chassis are functioning as designed. To verify the status of a module at any time, enter the **show module** command. The interfaces in each module are ready to be configured when the ok status is displayed in the **show module** command output. See [Example 6-5](#).

Example 6-5 Displaying Module Information

```
switch# show module
Mod  Ports  Module-Type                Model                Status
---  ---
6    0       Supervisor module-1X      N7K-SUP1             active *

Mod  Sw                Hw                World-Wide-Name(s) (WWN)
---  ---
6    4.0(0.855)       0.34051          --
```

Send document comments to nexus7k-docfeedback@cisco.com

```

Mod  MAC-Address(es)                               Serial-Num
---  -
6    00-1b-54-c1-20-90 to 00-1b-54-c1-28-90    JAB1152011J

* this terminal session

switch#

```

The Status column in the output should display an ok status for switching modules and an active or standby (or HA-standby) status for supervisor modules. If the status is either ok or active, you can continue with your configuration.



Note

A standby supervisor module reflects the HA-standby status if the HA switchover mechanism is enabled. If the warm switchover mechanism is enabled, the standby supervisor module reflects the standby status.

For information about the states through which a switching module progresses, see the [“Checking the State of a Module”](#) section on page 6-16.

Checking the State of a Module

If your chassis has more than one I/O module, you can check the progress by repeatedly using the **show module** command and viewing the Status column each time.

The I/O module goes through a testing and an initializing stage before displaying an ok status. [Table 6-8](#) describes the possible states in which a module can exist.

Table 6-8 **Module States**

show module Command Status Output	Description
powered up	The hardware has electrical power. When the hardware is powered up, the software begins booting.
testing	The switching module has established connection with the supervisor and the switching module is performing bootup diagnostics.
initializing	The diagnostics have completed successfully and the configuration is being downloaded.
failure	The switch detects a switching module failure upon initialization and automatically attempts to power-cycle the module three times. After the third attempt, the module powers down.
ok	The switch is ready to be configured.
power-denied	The switch detects insufficient power for a switching module to power up.
active	This module is the active supervisor module and the switch is ready to be configured.
HA-standby	The HA switchover mechanism is enabled on the standby supervisor module.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Connecting to a Module

At any time, you can connect to any module by using the **attach module** command. Once you are at the module prompt, you can obtain further details about the module by using module-specific commands in EXEC mode.

SUMMARY STEPS

1. **attach module** *number*
2. **dir bootflash**

DETAILED STEPS

	Command	Purpose
Step 1	attach module <i>slot_number</i> Example: <pre>switch# attach module 6 switch(standby)#</pre>	Provides direct access to the specified module (in this example, the standby supervisor module is in slot 6).
Step 2	dir bootflash Example: <pre>switch# dir bootflash: 80667580 Feb 21 22:04:59 2008 is855.S7 22168064 Feb 21 22:04:19 2008 ks855.S7 16384 Jan 03 19:56:00 2005 lost+found/ Usage for bootflash://sup-local 234045440 bytes used 1684602880 bytes free 1918648320 bytes total switch#</pre>	Provides the available space information for the standby supervisor module. Note Use the exit command to exit the module-specific prompt. Tip If you are not accessing the switch from a console terminal, this step is the only way to access the standby supervisor module.

You can also use the **attach module** command to display the standby supervisor module information, although you cannot configure the standby supervisor module using this command.

Shutting Down Modules

This section includes the following topics:

- [Shutting Down a Supervisor or I/O Module, page 6-18](#)
- [Shutting Down a Fabric Module, page 6-18](#)

Send document comments to nexus7k-docfeedback@cisco.com

Shutting Down a Supervisor or I/O Module

To perform a graceful shutdown of a supervisor or I/O module, use the **out-of-service module** command to specify the slot with that module as follows:

```
switch# out-of-service module slot
```

Shutting Down a Fabric Module

To perform a graceful shutdown of a fabric module, use the **out-of-service xbar** command to specify the fabric slot with that module as follows:

```
switch# out-of-service xbar slot
```

Information About Module Temperature

This section includes the following topics:

- [Overview of Module Temperatures, page 6-18](#)
- [Displaying the Module Temperature, page 6-19](#)

Overview of Module Temperatures

Built-in, automatic sensors are provided in all switches in the Cisco Nexus 7000 Series to monitor your switch at all times.

Each module (supervisor, I/O, and fabric) has temperature sensors with two thresholds:

- **Minor temperature threshold**—When a minor threshold is exceeded, a minor alarm occurs and the following actions occur for all four sensors:
 - System messages are displayed.
 - Call Home alerts are sent (if configured).
 - SNMP notifications are sent (if configured).
- **Major temperature threshold**—When a major threshold is exceeded, a major alarm occurs and the following actions occur:
 - For sensors 1, 3, and 4 (outlet and onboard sensors), the following actions occur:
 - System messages are displayed.
 - Call Home alerts are sent (if configured).
 - SNMP notifications are sent (if configured).
 - For sensor 2 (intake sensor), the following actions occur:
 - If the threshold is exceeded in a switching module, only that module is shut down.
 - If the threshold is exceeded in an active supervisor module with HA-standby or standby present, only that supervisor module is shut down and the standby supervisor module takes over.

Send document comments to nexus7k-docfeedback@cisco.com

If you do not have a standby supervisor module in your switch, you have 2 minutes to decrease the temperature. During this interval, the software monitors the temperature every 5 seconds and continuously sends system messages as configured.



Tip

We recommend that you install dual supervisor modules. If you are using a Cisco Nexus 7000 Series switch without dual supervisor modules, we recommend that you immediately replace the fan module if just one fan is not working.



Note

A threshold value of -127 indicates that no thresholds are configured or applicable.

Displaying the Module Temperature

You can display temperature readings for module temperature sensors by using the **show environment temperature** command. See [Example 6-6](#).

Example 6-6 Displaying Temperature Information for Hardware

```
switch# show environment temperature
```

Temperature:

Module	Sensor	MajorThresh (Celsius)	MinorThres (Celsius)	CurTemp (Celsius)	Status
1	Crossbar (s5)	105	95	60	Ok
1	QEng1Sn1 (s12)	115	110	70	Ok
1	QEng1Sn2 (s13)	115	110	68	Ok
1	QEng1Sn3 (s14)	115	110	67	Ok
1	QEng1Sn4 (s15)	115	110	68	Ok
1	QEng2Sn1 (s16)	115	110	70	Ok
1	QEng2Sn2 (s17)	115	110	68	Ok
1	QEng2Sn3 (s18)	115	110	68	Ok
1	QEng2Sn4 (s19)	115	110	68	Ok
1	L2Lookup (s27)	115	105	57	Ok
1	L3Lookup (s28)	120	110	62	Ok
2	Crossbar (s5)	105	95	65	Ok
2	QEng1Sn1 (s12)	115	110	70	Ok
2	QEng1Sn2 (s13)	115	110	68	Ok
2	QEng1Sn3 (s14)	115	110	67	Ok
2	QEng1Sn4 (s15)	115	110	68	Ok
2	QEng2Sn1 (s16)	115	110	69	Ok
2	QEng2Sn2 (s17)	115	110	68	Ok
2	QEng2Sn3 (s18)	115	110	67	Ok
2	QEng2Sn4 (s19)	115	110	68	Ok
2	L2Lookup (s27)	115	105	56	Ok
2	L3Lookup (s28)	120	110	63	Ok
5	Outlet1 (s1)	125	125	49	Ok
5	Outlet2 (s2)	125	125	37	Ok
5	Intake (s3)	60	42	32	Ok
5	EOBC_MAC (s4)	105	95	43	Ok
5	CPU (s5)	105	95	40	Ok
5	Crossbar (s6)	105	95	61	Ok
5	Arbiter (s7)	110	100	67	Ok
5	CTSdev1 (s8)	115	105	43	Ok

Send document comments to nexus7k-docfeedback@cisco.com

```

5          InbFPGA (s9)    105          95          44          Ok
5          QEng1Sn1 (s10) 115          105         60          Ok
5          QEng1Sn2 (s11) 115          105         59          Ok
5          QEng1Sn3 (s12) 115          105         56          Ok
5          QEng1Sn4 (s13) 115          105         57          Ok
xbar-1    Outlet (s1)    125          125         38          Ok
xbar-1    Intake (s2)    60           42          32          Ok
xbar-1    Crossbar (s3)  105          95          56          Ok
xbar-2    Outlet (s1)    125          125         39          Ok
xbar-2    Intake (s2)    62           42          31          Ok
xbar-2    Crossbar (s3)  105          95          56          Ok
switch#

```

Displaying Environment Information

You can display all of the environment-related switch information by using the **show environment** command. See [Example 6-7](#).

Example 6-7 Displaying All Environmental Information

```

switch# show environment

Clock:
-----
Clock      Model              Hw      Status
-----
A          Clock Module      --      NotSupported/None
B          Clock Module      --      NotSupported/None

Fan:
-----
Fan        Model              Hw      Status
-----
ChassisFan1  N7K-C7010-FAN-S  0.410   Ok
ChassisFan2  N7K-C7010-FAN-S  0.410   Ok
ChassisFan3  N7K-C7010-FAN-F  0.209   Ok
ChassisFan4  N7K-C7010-FAN-F  0.209   Ok
Fan_in_PS1   --                --       Ok
Fan_in_PS2   --                --       Ok
Fan_in_PS3   --                --       Absent

Temperature:
-----
Module    Sensor              MajorThresh  MinorThres  CurTemp  Status
              (Celsius)      (Celsius)    (Celsius)
-----
6         Outlet1 (s1)       125          125         47       Ok
6         Outlet2 (s2)       125          125         40       Ok
6         Intake (s3)        60           42          31       Ok
6         EOBC_MAC (s4)     105          95          44       Ok
6         CPU (s5)          105          95          39       Ok
6         Crossbar (s6)     105          95          58       Ok
6         Arbiter (s7)      110          100         61       Ok
6         CTSdev1 (s8)     115          105         41       Ok
6         InbFPGA (s9)     105          95          45       Ok
6         QEng1Sn1 (s10)   115          105         62       Ok
6         QEng1Sn2 (s11)   115          105         60       Ok

```

Send document comments to nexus7k-docfeedback@cisco.com

```

6      QEng1Sn3 (s12)  115          105          59          Ok
6      QEng1Sn4 (s13)  115          105          60          Ok
xbar-1 Outlet (s1)    125          125          35          Ok
xbar-1 Intake (s2)    60           42           30          Ok
xbar-1 Crossbar (s3)  105          95           45          Ok
xbar-2 Outlet (s1)    125          125          37          Ok
xbar-2 Intake (s2)    62           42           29          Ok
xbar-2 Crossbar (s3)  105          95           45          Ok

```

Power Supply:
Voltage: 50 Volts

```

-----
PS  Model                Power      Power      Status
      (Watts)      (Amp)
-----
1   N7K-AC-6.0KW         6000.00   120.00    Ok
2   N7K-AC-6.0KW         6000.00   120.00    Ok
3   -----              0.00      0.00      Absent

```

```

Mod Model                Power      Power      Power      Power      Status
      Requested Requested  Allocated Allocated
      (Watts)      (Amp)      (Watts)    (Amp)
-----
6   N7K-SUP1             400.00    8.00      400.00    8.00      Powered-Up
Xb1 N7K-C7010-FAB-1      60.00     1.20     60.00     1.20      Powered-Up
Xb2 N7K-C7010-FAB-1      60.00     1.20     60.00     1.20      Powered-Up

```

Power Usage Summary:

```

-----
Power Supply redundancy mode:           Redundant
Power Supply redundancy operational mode: Redundant

```

```

Total Power Capacity                    6000.00 W

Power reserved for Supervisor(s)        800.00 W
Power reserved for Fan Module(s)        2002.00 W
Power reserved for Fabric Module(s)     300.00 W
Power currently used by Modules          0.00 W

```

```

-----
Total Power Available                    2898.00 W
-----

```

switch#

Reloading Modules

You can reload the entire switch, reset specific modules in the switch, or reload the image on specific modules in the switch.

This section includes the following topics:

- [Reloading the Switch, page 6-22](#)
- [Power Cycling Modules, page 6-22](#)

Send document comments to nexus7k-docfeedback@cisco.com

Reloading the Switch

To reload the switch, use the **reload** command without any options. When you use this command, you reboot the switch.



Note

If you need to use the **reload** command, be sure to save the running configuration by using the **copy running-config startup-config** command beforehand.

Power Cycling Modules

To power cycle any module, follow these steps:

- Step 1** Identify the module that needs to be reset.
- Step 2** Reset the identified module by entering the **reload module** command. This command power cycles the selected module.

```
switch# reload module number
```

The *number* indicates the slot in which the identified module resides.



Caution

Reloading a module disrupts traffic through the module.

Saving the Module Configuration

To save the new configuration to nonvolatile storage, use the **copy running-config startup-config** command from EXEC mode. Once you enter this command, the running and the startup copies of the configuration are identical.

[Table 6-9](#) displays various scenarios when module configurations are preserved or lost.

Table 6-9 Switching Module Configuration Status

Scenario	Consequence
A particular switching module is removed and you used the copy running-config startup-config command again.	The configured module information is lost.
A particular switching module is removed and the same switching module is replaced before you enter the copy running-config startup-config command again.	The configured module information is preserved.
A particular switching module is removed and replaced with the same type switching module, and you entered the reload module number command.	The configured module information is preserved.
A particular switching module is reloaded when you enter the reload module number command.	The configured module information is preserved.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Purging the Module Configuration

To delete the configuration in an empty slot or in a slot with a powered-down I/O module, use the **purge module slot running-config** command from EXEC mode. This command clears the running configuration for the specified slot. This command does not work on supervisor modules or on any slot that currently has a powered-up module. This command only works on an empty slot (where the specified module once resided) or on a slot with a powered-down I/O module.

The **purge module** command clears the configuration for any module that previously existed in a slot and has since been removed or powered down. While the module was in that slot, some parts of the configuration may have been stored in the running configuration and cannot be reused (for example, IP addresses), unless you clear that from the running configuration.

For example, suppose you create an IP storage configuration with a 48-port 10/100/1000 Ethernet module in slot 3 in Switch A. This module uses IP address 10.1.5.500. You decide to remove this I/O module and move it to Switch B, and you no longer need the IP address 10.1.5.500. If you try to configure this unused IP address, you will receive an error message that prevents you from proceeding with the configuration. In this case, you need to enter the **purge module 3 running-config** command to clear the old configuration in Switch A before using this IP address.

Powering Off I/O Modules

By default, all fabric modules are configured to be in the power up state.

SUMMARY STEPS

1. **config t**
2. **[no] poweroff module slot_number**

Send document comments to nexus7k-docfeedback@cisco.com

DETAILED STEPS

	Command	Purpose
Step 1	config t Example: switch# config t switch(config)#	Enters configuration mode.
Step 2	poweroff module slot_number Example: switch(config)# poweroff module 1 switch(config)# no poweroff module slot_number Example: switch(config)# no poweroff module 1 switch(config)#	Powers off the specified module (fabric module 1) in the switch. Powers up the specified module (fabric module 1) in the switch.

Information About Fan Trays

Hot-swappable fan trays are provided in all switches in the Cisco Nexus 7000 Series to manage airflow and cooling for the entire switch. Each fan tray contains multiple fans to provide redundancy. The switch can continue functioning in the following situations:

- One or more fans fail within a fan tray—Even with multiple fan failures, the Cisco Nexus 7000 Series switch can continue functioning. When a fan fails within a tray, the functioning fans in the module increase their speed to compensate for the failed fans.
- The fan tray is removed for replacement—The fan tray is designed to be removed and replaced while the system is operating without presenting an electrical hazard or damage to the system. When replacing a failed fan tray in a running system, be sure to promptly replace the fan tray.



Tip

If one or more fans fail within a fan tray, the Fan Status LED turns red. A fan failure could lead to temperature alarms if not corrected immediately.

The fan status is continuously monitored by the software. In case of a fan failure, these actions occur:

- System messages are displayed.
- Call Home alerts are sent (if configured).
- SNMP notifications are sent (if configured).

Use the **show environment fan** command to display the fan module status (see [Example 6-8](#)).

Example 6-8 Displays Chassis Fan Information

```
switch# show environment fan
-----
Fan           Model           Hw           Status
-----
Chassis      DS-9SLOT-FAN   1.2         ok
PS-1         --              --           ok
PS-2         --              --           absent
```

Send document comments to nexus7k-docfeedback@cisco.com

The possible Status field values for a fan module on the Cisco Nexus 7000 Series switches are as follows:

- If the fan module is operating properly, the status is ok.
- If the fan is physically absent, the status is absent.
- If the fan is physically present but not working properly, the status is failure.

On the Cisco Nexus 7010, each system fan module has 15 fans. If the State field for one of these fans contains “failure” in the **show environment fan** command output, it also displays the number of the failing fans (see [Example 6-9](#)).

Example 6-9 Displaying a Cisco Nexus 7010 System Fan Tray Failure

```
switch# show environment fan

Fan:
-----
Fan           Model                Hw           Status
-----
ChassisFan1   N7K-C7010-FAN-S      0.410        Ok
ChassisFan2   N7K-C7010-FAN-S      0.410        Ok
ChassisFan3   N7K-C7010-FAN-F      0.209        Ok
ChassisFan4   N7K-C7010-FAN-F      0.209        Ok
Fan_in_PS1    --                   --           Ok
Fan_in_PS2    --                   --           Ok
Fan_in_PS3    --                   --           Absent

switch#
```

EPLD Configuration

The Cisco Nexus 7000 Series switches contain several programmable logical devices (PLDs) that provide hardware functionalities in all modules. Cisco provides electronic programmable logical device (EPLD) image upgrades to enhance hardware functionality or to resolve known issues. PLDs include electronic programmable logical 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 great 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 Systems does not provide upgrade EPLD images very frequently, and you do not have to upgrade your EPLD images unless they fix the functions for the hardware that you are using in your Cisco Nexus 7000 switch. The EPLD 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 EPLD image upgrade available, the *Cisco Nexus 7000 Series FPGA/EPLD Upgrade Release Notes* announce their availability, and you can download them from <http://www.cisco.com>.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

This section includes the following topics:

- [Deciding When to Upgrade EPLDs, page 6-26](#)
- [Switch Requirements, page 6-27](#)
- [New EPLDs, page 6-27](#)
- [Installation Guidelines, page 6-30](#)
- [Downloading the EPLD Images, page 6-30](#)
- [Preparing the EPLD Images for Installation, page 6-31](#)
- [Upgrading EPLD Images, page 6-34](#)
- [Displaying the EPLD Versions, page 6-39](#)
- [Displaying the Status of EPLD Upgrades, page 6-41](#)

Deciding When to Upgrade EPLDs

It is not always necessary to upgrade EPLD images; however, 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 it is best to postpone the upgrade until a better time.

[Table 6-10](#) provides high-level guidelines to help network administrators determine whether an EPLD upgrade is necessary.

Table 6-10 **Conditions For Upgrading EPLD Images**

Condition	Modules Targeted for Upgrades
Upgrading the Cisco NX-OS operating system from Release 4.0 to Release 4.1(2)	Supervisor modules (N7K-SUP1) 32-port 10-Gbps Ethernet I/O modules (N7K-M132XP-12) (if installed) Fabric modules (N7K-C7018-FAB1) 48-port 10/100/1000 Ethernet I/O modules (N7K-M148GT-11) (if installed)—this upgrade is not mandatory but can be performed to correct random blinking of LEDs.
Moving 32-port 10-Gbps Ethernet I/O modules from a Cisco Nexus 7010 switch to a Cisco Nexus 7018 switch	32-port 10-Gbps Ethernet I/O modules (N7K-M132XP-12)
Moving 48-port 10/100/1000 Ethernet I/O modules from a Cisco Nexus 7010 switch to a Cisco Nexus 7018 switch	48-port 10/100/1000 Ethernet I/O modules (N7K-M148GT-11)
Moving the supervisor (N7K-SUP1) modules from a Cisco Nexus 7010 switch to a Cisco Nexus 7018 switch.	Supervisor (N7K-SUP1) modules

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Table 6-10 Conditions For Upgrading EPLD Images (continued)

Condition	Modules Targeted for Upgrades
Upgrading the Cisco NX-OS operating system from Release 4.1(2) to Release 4.1(3) on a switch that shipped with Release 4.1(2).	32-port 10-Gbps Ethernet I/O modules (N7K-M132XP-12) Fabric modules for Cisco Nexus 7018 (N7K-C7018-FAB1)
Upgrading the Cisco NX-OS operating system from Release 4.1(2) to Release 4.1(3) on a switch that did not ship with Release 4.1(2) and a full EPLD upgrade to Release 4.1(2) was not performed.	Supervisor (N7K-SUP1) modules 48-port 10/100/1000 Ethernet I/O modules (N7K-M148GT-11)
Using vPC.	32-port 10-Gbps Ethernet I/O modules (N7K-M132XP-12)
Using Cisco Trusted Security.	32-port 10-Gbps Ethernet I/O modules (N7K-M132XP-12)

Switch Requirements

This section includes the following topics:

- [Hardware Requirements, page 6-27](#)
- [Supported Switch Operating Systems, page 6-27](#)

Hardware Requirements

The Cisco Nexus 7000 Series switch must include the following hardware:

- One or two supervisor modules, each with at least 120 MB of available bootflash or slot0 memory
- One or more I/O modules
- One or more fabric modules
- Two fabric fan tray modules
- Two system fan tray modules

You must be able to access the system through a console, SSH, or Telnet.

You must have administrator privileges to work with the Cisco Nexus 7000 Series switches.

Supported Switch Operating Systems

The Cisco Nexus 7000 Series switch must be running the Cisco NX-OS operating system, which is used to perform the EPLD upgrades.

New EPLDs

Each EPLD image that you can download from <http://www.cisco.com> is a bundle of EPLD upgrades. To see which EPLD versions were updated for Release 4.1, see [Table 6-11](#). To see all of the current EPLD versions for each device, see [Table 6-12](#).

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Table 6-11 Updated EPLDs for the Cisco NX-OS Release 4.1(2)

NX-OS Release	Module Type	EPLD Switch	New EPLD Version
4.1(2)	Supervisor (N7K-SUP1)	Power Manager	3.7
		IO	3.26
		Local Bus CPLD	3.0
	32-port 10-Gbps Ethernet I/O (N7K-M132XP-12)	Power Manager	4.6
		IO	1.13
	48-port 10/100/1000 Ethernet I/O (N7K-M148GT-11)	Power Manager	5.4
		IO	2.11
	48-port 1-Gbps Ethernet I/O (N7K-M148GS-11)	Power Manager	4.6
		IO	1.3
		SFP	1.4
		Forwarding Engine	1.6
	Fabric Module (Cisco Nexus 7010)	Power Manager	2.9
Fabric Module (Cisco Nexus 7018) (N7K-C7018-FAB1)	Power Manager	1.1	
4.1(3)	32-port 10-Gbps Ethernet I/O (N7K-M132XP-12)	IO	1.14
	Fabric Module (Cisco Nexus 7018) (N7K-C7018-FAB1)	Power Manager	1.2
4.1(4)	N.A.	N.A.	None

Table 6-12 Complete List of EPLDs for the Cisco NX-OS Release 4.1(2)

Module Type	EPLD Switch	EPLD Version
Supervisor	Power Manager	3.7
	IO	3.26
	Inband	1.7
	Local Bus CPLD	3.0
	CMP CPLD	6.0
32-port 10-Gbps Ethernet I/O	Power Manager	4.6
	IO	1.13
	Forwarding Engine	1.6
	FE Bridge	186.3
	LinkSec Engine	1.8

Send document comments to nexus7k-docfeedback@cisco.com

Table 6-12 Complete List of EPLDs for the Cisco NX-OS Release 4.1(2)

Module Type	EPLD Switch	EPLD Version
48-port 10/100/1000 Ethernet I/O	Power Manager	5.4
	IO	2.11
	Forwarding Engine	1.6
48-port 1-Gbps Ethernet I/O	Power Manager	4.6
	IO	1.3
	SFP	1.4
	Forwarding Engine	1.6
Fabric module (Cisco Nexus 7010)	Power Manager	2.9
Fabric module (Cisco Nexus 7018)	Power Manager	1.1
Fan (Cisco Nexus 7010)	Fan Controller	0.7
Fan (Cisco Nexus 7018)	Fan Controller	0.2



Note

To list the EPLDs running on your switch, use the **show version *module_number* epld** command. If any of the versions that you list are older than what is listed in [Table 6-12](#), it is recommended that you update the EPLDs.

EPLD Images Needed for vPC

The virtual port channel (vPC) feature is available beginning with Cisco NX-OS Release 4.1(3). When you enable vPC on the chassis, you must have EPLD Release 186.3 on the 32-port 10 Gbps Ethernet IO modules (N7K-M132XP-12).



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.

Most of the N7K-M132XP-12 modules in the chassis already meet this minimum EPLD requirement, but if you are working with a N7K-M132XP-12 module that was shipped before June 2008, you might need to upgrade the EPLD version.

To determine the EPLD version for all N7K-M132XP-12 modules, enter the **show version module *module_id* epld**. If the line FE Bridge(x) version displays a version earlier than 186.3 (for example, 186.2), you should schedule an EPLD upgrade to a version that is compatible with the target NX-OS release. For example, if you want to run Cisco NX-OS Release 4.1(3), you should choose Release 4.1(3) EPLDs.

The following example shows Release 186.3 on the FE Bridge line, which is the correct EPLD version:

```
Nexus-7k(config)# show ver mod 7 epld

EPLD Device Version
-----
Power Manager 4.4
IO 1.10
Forwarding Engine 1.6
```

Send document comments to nexus7k-docfeedback@cisco.com

```
FE Bridge(1) 186.3 << OK!
FE Bridge(2) 186.3 << OK!
Linksec Engine(1) 1.5
Linksec Engine(2) 1.5
Linksec Engine(3) 1.5
Linksec Engine(4) 1.5
Linksec Engine(5) 1.5
Linksec Engine(6) 1.5
Linksec Engine(7) 1.5
Linksec Engine(8) 1.5
```

Installation Guidelines

You can upgrade (or downgrade) EPLDs using CLI commands on the Cisco Nexus 7000 Series switch. Follow these guidelines when you upgrade or downgrade EPLDs:

- 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.
- You can execute an upgrade from the active supervisor module only. All the modules, including the active supervisor module, can be updated individually.
- You can individually update each module whether it is online or offline as follows:
 - If you upgrade EPLD images on an online module, only the EPLD images with version numbers that differ from the new EPLD images are upgraded.
 - If you upgrade EPLD images on an offline module, all of the EPLD images are upgraded.
- On a system 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 7000 Series 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.

Downloading the EPLD Images

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

To download the EPLD images, follow these steps:

-
- Step 1** From a browser, go to the following URL:
<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.

Send document comments to nexus7k-docfeedback@cisco.com

- Step 4** Click **Nexus 7000**.
The Cisco Nexus 7000 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 7000 Series switch from the list under **Data Center Switches > Cisco Nexus 7000 Series Switches**.
The Log In page opens.
- Step 7** 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 > 4.1(3)**.
The Downloads page displays image information, including a link to the downloadable Tar file, to the right of the 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.
-

You are ready to prepare the EPLD images for Installation (see the [“Preparing the EPLD Images for Installation”](#) section on page 6-31).

Preparing the EPLD Images for Installation

Before you can update the EPLD images for each of your system modules, you must determine the Cisco NX-OS version that your system is using, make sure that there is space for the new EPLD images, and download the images.

To prepare the EPLD images for installation, follow these steps:

- Step 1** Log in to the switch through the console port, an SSH session, or a Telnet session.

Send document comments to nexus7k-docfeedback@cisco.com

- Step 2** Verify that the switch is using the expected version of the Cisco NX-OS operating system. The kickstart and system lines indicate the Cisco NX-OS version. This step determines the versions of EPLD images that you must download.

```
switch# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2008, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1.. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
Software
  BIOS:      version 3.17.0
  loader:    version N/A
  kickstart: version 4.0(2) [gdb]
  system:    version 4.0(2) [gdb]
...
```

- Step 3** Verify that you have 120 MB of free space on the active or standby supervisor memory devices for the EPLD images that you will be downloading by using the **dir bootflash:** or **dir slot0:** commands. By default, these commands display the used and free memory for the active supervisor. If your switch has an additional supervisor (a standby supervisor), use the **show module** command to find the module number for the other supervisor, use the **attach module** command to attach to the module number, and then use the **dir bootflash:** or **dir slot0:** command to determine the amount of used and free memory. See [Example 6-10](#) to determine the amount of available bootflash memory, and see [Example 6-11](#) to determine the amount of available slot0 memory.

Example 6-10 Determining the Amount of Available Bootflash Memory

```
switch# dir bootflash:
 4096   Mar 18 17:31:11 2008 bak/
2429706 May 23 10:57:10 2008 dplug
89154513 May 27 22:04:37 2008 n7-dk9-nk
89151767 May 23 16:06:01 2008 n7-dk9-nk-old
 2429706 May 23 10:53:50 2008 n7000-s1-debug-sh.4.0.2.bin1
22171136 May 23 10:55:40 2008 n7000-s1-kickstart.4.0.2.bin1
  4096   May 23 13:03:37 2008 newer-fs/
  4096   May 28 15:13:30 2008 nk/
  127    Mar 20 16:37:59 2008 setip.sh

Usage for bootflash://sup-local
572186624 bytes used
306606080 bytes free
878792704 bytes total

switch# show module
Mod  Ports  Module-Type                Model                Status
---  -
2    32     10 Gbps Ethernet Module   N7K-M132XP-12       ok
5    0      Supervisor module-1X      N7K-SUP1             ha-standby
6    0      Supervisor module-1X      N7K-SUP1             active *
...
switch# attach module 5
...
4096   Mar 18 17:31:11 2008 bak/
2429706 May 23 10:57:10 2008 dplug
```

Send document comments to nexus7k-docfeedback@cisco.com

```
89154513      May 27 22:04:37 2008 n7-dk9-nk
89151767      May 23 16:06:01 2008 n7-dk9-nk-old
 2429706      May 23 10:53:50 2008 n7000-s1-debug-sh.4.0.2.bin1
22171136      May 23 10:55:40 2008 n7000-s1-kickstart.4.0.2.bin1
 4096         May 23 13:03:37 2008 newer-fs/
 4096         May 28 15:13:30 2008 nk/
 127          Mar 20 16:37:59 2008 setip.sh
```

```
Usage for bootflash://sup-local
572186624 bytes used
306606080 bytes free
878792704 bytes total
```

Example 6-11 Determining the Amount of Available Slot0 Memory

```
switch# dir slot0:
 25      Apr 28 23:07:28 2008 slot0
```

```
Usage for slot:
 642273280 bytes used
 261824512 bytes free
 904097792 bytes total
```

```
switch# show module
Mod  Ports  Module-Type                Model                Status
---  -
2    32     10 Gbps Ethernet Module   N7K-M132XP-12       ok
5    0      Supervisor module-1X      N7K-SUP1             ha-standby
6    0      Supervisor module-1X      N7K-SUP1             active *
```

```
...
switch(standby)# dir slot0://sup-standby/
 25      Apr 28 23:07:28 2008 slot0
```

```
Usage for slot:
 642273280 bytes used
 261824512 bytes free
 904097792 bytes total
```

Step 4 If there is not at least 120 MB of memory free for the EPLD files, delete some unneeded files, such as earlier images, so there is enough free memory.

```
switch# delete bootflash:n7000-s1-kickstart.4.0.1.bin
```

Step 5 Copy the EPLD image file from the FTP or management server to the bootflash or slot0 memory in the active supervisor module. The following example shows how to copy from the FTP server to the bootflash memory.

```
switch# copy ftp://10.1.7.2/n7000-s1-epld.4.0.2.img bootflash:n7000-s1-epld.4.0.2.img
```

Step 6 Copy the EPLD image to the standby supervisor.

```
switch# copy bootflash:n7000-s1-epld.4.0.2.img
bootflash://sup-standby/n7000-s1-epld.4.0.2.img
```

You are ready to upgrade the EPLD images (see the [“Upgrading EPLD Images”](#) section on page 6-34).

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Upgrading EPLD Images

When you start upgrading the EPLD images for a module, the Cisco NX-OS software tries to list the current and new versions for each EPLD. If the module is installed and online, the software reports both the installed and new versions of each EPLD, and where there is a difference, the software upgrades (or downgrades) to the new version when you confirm that the upgrade should occur. For a module that is installed but offline, the software cannot determine the installed versions of its EPLDs so it upgrades all of the EPLDs for that module when you confirm the upgrade. For a module that is not installed, the software displays an error message and does not upgrade the EPLDs.

[Example 6-12](#) shows how the software reports the current and new EPLD versions for a module that does not need EPLD upgrades. The current and new version numbers for each EPLD are the same.

Example 6-12 EPLD Version Comparison Report—No Upgrade Needed

EPLD	Curr Ver	New Ver
Power Manager	5.3	5.3
IO	2.10	2.10
Forwarding Engine	1.6	1.6
Module 1 is upto date		

[Example 6-13](#) shows how the software reports the current and new EPLD versions for a module that has EPLD images that can be upgraded. According to this report, each of the downloaded Linksec Engine EPLDs has a different version than the same EPLD on the module, so the software will upgrade those EPLDs but will not upgrade the other EPLDs that have the same version numbers. If the new versions have a smaller version number compared to the current version, the software downgrades the versions.

Example 6-13 EPLD Version Comparison Report—Upgrade Needed

EPLD	Curr Ver	New Ver
Power Manager	4.4	4.4
IO	1.10	1.10
Forwarding Engine	1.6	1.6
FE Bridge(1)	186.3	186.3
FE Bridge(2)	186.3	186.3
Linksec Engine(1)	1.5	1.7
Linksec Engine(2)	1.5	1.7
Linksec Engine(3)	1.5	1.7
Linksec Engine(4)	1.5	1.7
Linksec Engine(5)	1.5	1.7
Linksec Engine(6)	1.5	1.7
Linksec Engine(7)	1.5	1.7
Linksec Engine(8)	1.5	1.7

The following sections explain how to upgrade the EPLD images for I/O and standby modules, the active supervisor module on single-supervisor systems, fabric modules, and fan tray modules:

- [Upgrading the EPLD Images for I/O or Standby Supervisor Modules, page 6-35](#)
- [Upgrading EPLDs for the Active Supervisor Module, page 6-36](#)
- [Upgrading EPLDs for a Fabric Module, page 6-38](#)
- [Upgrading EPLDs for a Fan Tray Module, page 6-39](#)

Send document comments to nexus7k-docfeedback@cisco.com

Upgrading the EPLD Images for I/O or Standby Supervisor Modules

You can upgrade the EPLD images for an I/O module or standby supervisor module while the switch is operational. If you need to upgrade EPLD images for a single-supervisor module, see the “[Upgrading EPLDs for the Active Supervisor Module](#)” section on page 6-36.



Caution

Upgrading EPLD images for an online I/O module can disrupt traffic going through that module.

To upgrade EPLDs for an I/O module or the standby supervisor module, follow these steps:

Step 1 Determine the slot number for each module by entering the **show module** command.

```
switch# show module
Mod Ports Module-Type Model Status
-----
1 48 10/100/1000 Mbps Ethernet Module N7K-N148GT-11 ok
3 32 10 Gbps Ethernet Module N7K-M132XP-12 ok
5 0 Supervisor module-1X N7K-SUP1 active
6 0 Supervisor module-1X N7K-SUP1 ha-standby
10 48 10/100/1000 Mbps Ethernet Module N7K-M148GT-11 ok

Mod Sw Hw World-Wide_name(s) (WWN)
---
1 4.0(2) 0.503 --
3 4.0(2) 0.601 --
5 4.0(2) 0.900 --
6 4.0(2) 0.802 --
10 4.0(2) 0.902 --

Mod MAC-Address(es) Serial-Num
---
1 00-19-07-6c-c0-6c to 00-19-07-6c-c0-a0 JAB11060144
3 00-1b-54-c1-33-98 to 00-1b-54-c1-33-bc JAB1152010K
5 00-1b-54-c1-16-18 to 00-1b-54-c1-16-20 JAB114902HF
6 00-19-07-c1-00-b8 to 00-1b-54-c1-00-c0 JAB114402JX
10 00-1b-54-c1-07-88 to 00-1b-54-c1-07-bc JAB114501RW

* this terminal session
switch#
```

Step 2 Install the EPLDs by entering the **install module slot_number epld url** command.

```
switch# install module 6 epld bootflash:n7000-s1-epld.4.0.2.img

EPLD image file , built on Fri May 16 20:36:39 2008

EPLD Curr Ver New Ver
-----
Power Manager 3.4 3.6
IO 3.23 3.23
Inband 1.7 1.7
Local Bus CPLD 2.1 2.1
CMP CPLD 6.0 6.0
WARNING: Upgrade process could take upto 30 minutes.

Standby supervisor is being upgraded.
Do you want to continue (y/n) ?
```

Send document comments to nexus7k-docfeedback@cisco.com

Step 3 Begin upgrading the EPLD images by entering **Y** for yes.

Do you want to continue (y/n) ? **Y**

Step 4 For releases 4.0(2) or earlier, if you updated the power management EPLD image, you must reset the power for the module so that EPLD can take effect (this is not required for release 4.0(3) or later). You can reset the power in one of the following two ways:

- To reset the power for the module, physically remove the module and reinstall it.



Note A module reload or just pressing the ejector buttons on the module is not sufficient for this reset requirement.

- To reset the entire switch, power cycle the switch.

To confirm the EPLD upgrade, see the [“Displaying EPLD Versions for an I/O or Supervisor Module” section on page 6-40](#).



Caution

Resetting the power disrupts any data traffic going through the affected modules. If you power cycle the entire switch, all data traffic going through the switch at the time of the power cycling is disrupted. This is not necessary for release 4.0(3) or later.



Note

As of release 4.0(3) or later, the switch automatically loads the new power management EPLD after an upgrade, so it is no longer necessary to reset the power for the module or system.

Upgrading EPLDs for the Active Supervisor Module

When you upgrade EPLDs on a system with only one supervisor module, data traffic on the switch will be affected when you reload the system after the upgrade. If you are upgrading EPLDs for a switch with two supervisor modules, you can upgrade the standby supervisor while the system is operational as explained in the [“Upgrading the EPLD Images for I/O or Standby Supervisor Modules” section on page 6-35](#).

To upgrade EPLDs for the supervisor module in a system with a single supervisor module, follow these steps:

Step 1 Determine the slot number for each module. The active supervisor is in either slot 5 or slot 6.

```
switch# show module
Mod Ports Module-Type Model Status
---
1 48 10/100/1000 Mbps Ethernet Module N7K-N148GT-11 ok
3 32 10 Gbps Ethernet Module N7K-M132XP-12 ok
5 0 Supervisor module-1X N7K-SUP1 active
10 48 10/100/1000 Mbps Ethernet Module N7K-M148GT-11 ok

Mod Sw Hw World-Wide_name(s) (WWN)
---
1 4.0(2) 0.503 --
3 4.0(2) 0.601 --
5 4.0(2) 0.900 --
```

Send document comments to nexus7k-docfeedback@cisco.com

```

10  4.0(2)          0.902  --

Mod  MAC-Address(es)                               Serial-Num
---  -
1    00-19-07-6c-c0-6c to 00-19-07-6c-c0-a0  JAB11060144
3    00-1b-54-c1-33-98 to 00-1b-54-c1-33-bc  JAB1152010K
5    00-1b-54-c1-16-18 to 00-1b-54-c1-16-20  JAB114902HF
10   00-1b-54-c1-07-88 to 00-1b-54-c1-07-bc  JAB114501RW

* this terminal session

```

Step 2 Install the EPLDs by entering the **install module slot_number epld url** command.

```
switch# install module 5 epld bootflash:n7000-s1-epld.4.0.2.img
```

```
EPLD image file , built on Fri May 16 20:36:39 2008
```

EPLD	Curr Ver	New Ver
Power Manager	3.4	3.6
IO	3.23	3.23
Inband	1.7	1.7
Local Bus CPLD	2.1	2.1
CMP CPLD	6.0	6.0

WARNING: Upgrade process could take upto 30 minutes.

```

Active Supervisor is being upgraded.
Data traffic on the switch will be affected!!
The switch will reload after the upgrade process.
Do you want to continue (y/n) ?

```

Step 3 Confirm the upgrade by entering **Y** for yes.

```

Do you want to continue (y/n) ? Y
\
Module 5 EPLD upgrade is successful

```

The Cisco Nexus 7000 Series switch reloads as soon as the upgrade occurs.

Step 4 For releases 4.0(2) or earlier, if you updated the power management EPLD image, you must reset the power for the module so that EPLD can take effect (this is not required for release 4.0(3) or later). You can reset the power in one of the following two ways:

- To reset the power for the module, physically remove the module and reinstall it.



Note A module reload or just pressing the ejector buttons on the module is not sufficient for this reset requirement.

- To reset the entire switch, power cycle the system.

To confirm the EPLD upgrade, see the [“Displaying EPLD Versions for an I/O or Supervisor Module” section on page 6-40](#).



Caution

Resetting the power disrupts any data traffic going through the affected modules. If you power cycle the entire switch, all data traffic going through the switch at the time of the power cycling is disrupted. This is not necessary for release 4.0(3) or later.

Send document comments to nexus7k-docfeedback@cisco.com

**Note**

As of release 4.0(3), the switch automatically loads the new power management EPLD after an upgrade, so it is no longer necessary to reset the power for the module or switch.

Upgrading EPLDs for a Fabric Module

You can upgrade EPLDs for a fabric (Xbar) module while the system is operational as long as at least one other fabric module is operational.

To upgrade EPLDs for a fabric module, follow these steps:

Step 1 Determine which fabric modules are present on the Cisco Nexus 7000 Series switch.

```
switch# show module xbar
Xbar Ports  Module-Type                               Model                               Status
-----
1      0      Xbar                               N7K-C7010-FAB-1                    ok
2      0      Xbar                               N7K-C7010-FAB-1                    ok
3      0      Xbar                               N7K-C7010-FAB-1                    ok

Xbar Sw      Hw      World-Wide-Name(s) (WWN)
-----
1      NA      0.404  --
2      NA      0.405  --
4      NA      0.405  --

Xbar MAC-Address(es)                               Serial-Num
-----
1      NA      JAB114700WL
2      NA      JAB115000LU
4      NA      JAB115000LJ
```

* this terminal session

Step 2 Install the EPLD images for a fabric module by entering the **install xbar-module slot_number epld url** command.

```
switch# install xbar-module 1 epld bootflash:n7000-s1-epld.4.0.2.img
```

EPLD image file , built on Fri May 16 20:36:39 2008

```
EPLD                               Curr Ver    New Ver
-----
Power Manager                       2.7         2.8
WARNING: Upgrade process could upto 30 minutes.
Module could be powered down and up.
```

Xbar Module 1 will be powered down now!!

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

Step 3 Confirm the upgrade by entering **Y** for yes.

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

To confirm the EPLD upgrade, see the [“Displaying EPLD Versions for a Fabric Module”](#) section on page 6-40.

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Upgrading EPLDs for a Fan Tray Module

You can upgrade EPLDs for fan tray modules while the switch is operational.

To upgrade EPLDs for a fan tray module, follow these steps:

- Step 1** Display fan tray information, such as the module numbers and fan tray types.

```
switch# show environment fan

Fan:
-----
Fan          Model          Hw          Status
-----
Fan1(sys_fan1)          0.0        Ok
Fan2(sys_fan2)          0.0        Ok
Fan3(fab_fan1)          0.0        Ok
Fan4(fab_fan2)          0.0        Ok
Fan_in_PS1    --            --         Ok
Fan_in_PS2    --            --         Ok
Fan_in_PS3    --            --         Ok
Fan Air Filter : Absent
switch#
```

- Step 2** Upgrade the EPLD images for the fan tray module by entering the `install fan-module slot_number epld url` command.

```
switch# install fan-module 1 epld bootflash:n7000-s1-epld.4.0.2.img

EPLD image file , built on Fri May 16 20:36:39 2008

EPLD          Curr Ver    New Ver
-----
Fan Controller    0.5        0.7
Fan Controller    0.5        0.7
WARNING: Upgrade process could upto 30 minutes.
Module could be powered down and up.

Programming Fan Module 1 !!
Do you want to continue (y/n) ? [n]
```

- Step 3** Confirm the upgrade by entering **Y** for yes.

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

To confirm the EPLD upgrade, see the “[Displaying EPLD Versions for a Fan Tray Module](#)” section on [page 6-40](#).

Displaying the EPLD Versions

These topics describe how to display the EPLD versions on each module in your system and display the available EPLD versions:

- [Displaying EPLD Versions for an I/O or Supervisor Module, page 6-40](#)
- [Displaying EPLD Versions for a Fabric Module, page 6-40](#)
- [Displaying EPLD Versions for a Fan Tray Module, page 6-40](#)

Send document comments to nexus7k-docfeedback@cisco.com

- [Displaying the Available EPLD Versions, page 6-41](#)

Displaying EPLD Versions for an I/O or Supervisor Module

To display all of the current EPLD versions on a specific I/O or supervisor module, use the **show version module *slot_number* epld** command as shown in [Example 6-14](#).

Example 6-14 *Displaying the Current EPLD Versions for a Module*

```
switch# show version module 2 epld
```

EPLD Device	Version
Power Manager	4.2
IO	1.10
Forwarding Engine	1.6
FE Bridge(1)	186.2
FE Bridge(2)	186.2
Linksec Engine(1)	1.2
Linksec Engine(2)	1.2
Linksec Engine(3)	1.2
Linksec Engine(4)	1.2
Linksec Engine(5)	1.2
Linksec Engine(6)	1.2
Linksec Engine(7)	1.2
Linksec Engine(8)	1.2

Displaying EPLD Versions for a Fabric Module

To view all current EPLD versions on a fabric module, use the **show version xbar *slot_number* epld** command as shown in [Example 6-15](#).

Example 6-15 *Displaying the Current EPLD Versions for a Fabric Module*

```
switch# show version xbar 1 epld
```

EPLD Device	Version
Power Manager	2.7

Displaying EPLD Versions for a Fan Tray Module

To view all current EPLD versions on a specific fan tray, use the **show version fan *slot_number* epld** command as shown in [Example 6-16](#).

Example 6-16 *Displaying Current EPLD Versions for Fan Tray 1*

```
switch# show version fan 1 epld
```

EPLD Device	Version
Fan Controller(BUS A)	2.7
Fan Controller(BUS B)	2.7

Send document comments to nexus7k-docfeedback@cisco.com

Displaying the Available EPLD Versions

To view the available EPLD versions, use the **show version epld *url*** command as shown in [Example 6-17](#).

Example 6-17 *Displaying the Available EPLD Versions*

```
switch# show version epld bootflash:n7000-s1-epld.4.0.2.img

EPLD image file , built on Fri May 16 20:36:39 2008
```

Module Type	EPLD Device	Version
Supervisor-1X	Power Manager	3.7
Supervisor-1X	IO	3.26
Supervisor-1X	Inband	1.7
Supervisor-1X	Local Bus CPLD	3.0
Supervisor-1X	CMP CPLD	6.0
10/100/1000 Mbps Eth Module	Power Manager	5.4
10/100/1000 Mbps Eth Module	IO	2.10
10/100/1000 Mbps Eth Module	Forwarding Engine	1.6
10 Gbps Ethernet Module	Power Manager	4.6
10 Gbps Ethernet Module	IO	1.14
10 Gbps Ethernet Module	Forwarding Engine	1.6
10 Gbps Ethernet Module	FE Bridge	186.3
10 Gbps Ethernet Module	Linksec Engine	1.7
Xbar	Power Manager	2.9
Fan	Fan Controller	0.7
Fan	Fan Controller	0.7

Displaying the Status of EPLD Upgrades

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

Example 18 *Displaying EPLD Upgrades*

```
switch# show install epld status

1) Module 2 upgraded on Wed Sep 17 00:27:15 (354639 us)
Status: EPLD Upgrade was Successful
```

EPLD	Curr Ver	Old Ver
Power Manager	5.4	5.0
IO	2.11	2.8
Forwarding Engine	1.6	1.3

[Send document comments to nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com)

Default Settings

Table 6-13 lists the default hardware settings.

Table 6-13 *Default Hardware Parameters*

Parameters	Default
Power supply mode	Power supply redundancy mode