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Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter Getting Started Guide

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Overview

This guide provides instructions on how to install, configure, and manage your Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter—referred to as the switch module—in the IBM BladeCenter enclosure, and how to set up and configure your switch module.

For additional installation and configuration information about the switch module, see the switch module documentation on Cisco.com.

For blade enclosure compatibility, system requirements, important notes, limitations, open and resolved caveats, and last-minute documentation updates about the switch module, see the release notes, also on Cisco.com. When you use the online publications, refer to the documents that match the Cisco NX-OS software version that is running on the switch module.



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Safety Warnings

This section contains important safety information you should know before working with the switch module. Use the guidelines in this section to ensure your own personal safety and to help protect your device from potential damage. For a complete list of all warnings and compliance information, see the *Regulatory Compliance and Safety Information for the Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter*, which ships with the switch module.



Warning

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals. Statement 43



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity. Statement 1001



Warning

Class 1 laser product. Statement 1008



Warning

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Statement 1015



Warning

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing. Statement 1034

For a complete list of warnings for the switch module, see the *Regulatory Compliance and Safety Information for the Cisco Nexus Switch Module 4001I and 4005I for IBM BladeCenter*.

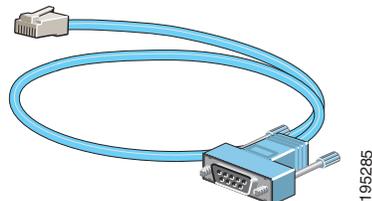
Verifying your Shipping Contents

In addition to the switch module, the Options Kit contains the following items:

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- Cisco Console Cable RJ-45-to-DB9 (Part Number 72-1259-01), as shown in [Figure 1](#)
- Product Documentation CD

Figure 1 Cisco Console Cable RJ-45-to-DB9



If you purchased the Option Kit for the switch module and one of these items was not included, contact your sales representative.

Connecting Devices

This section describes how to connect devices to the switch module and includes the following topics:

- [Installing and Connecting to Devices in the 10-Gigabit Ethernet Slots, page 3](#)
- [Connecting to 10/100/1000 Ports, page 3](#)
- [Verifying Port Connectivity, page 4](#)

Installing and Connecting to Devices in the 10-Gigabit Ethernet Slots

The 10-Gb Ethernet module slots on the switch module are used for connections to other switches and routers.

Use only Cisco-approved SFP+ or SFP modules with the switch module. Each Cisco module has an internal serial EEPROM that is encoded with security information. This encoding provides a way for Cisco to identify and validate that the module meets the requirements for the switch module. If the validation fails, the software will not bring up the port.

Connecting to 10/100/1000 Ports

The External Management Port on the switch module is a 10/100/1000 Ethernet port that uses standard RJ-45 connectors with Ethernet pinouts. The maximum cable length is 328 feet (100 meters). The 100BASE-TX and 1000BASE-T traffic requires a Category 5, Category 5e, or Category 6 UTP cable. The 10BASE-T traffic can use a Category 3 or Category 4 cable.

The autonegotiation feature is enabled by default on the External Management Port. At this setting, the port configures itself to operate at the speed of attached devices. If the attached device does not support autonegotiation, you can explicitly set the External Management Port speed and the duplex parameters. To maximize performance, either allow the port to autonegotiate both speed and duplex, or set the port speed and duplex parameters on both ends of the connection.

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For simplified cabling, the automatic medium-dependent interface crossover (auto-MDIX) feature is enabled by default on the External Management Port. With auto-MDIX enabled, the port detects the required cable type for copper Ethernet connections and configures the interface accordingly. Therefore, you can use either a crossover or a straight-through cable for connections to the External Management Port, regardless of the type of device on the other end of the connection.

For more information about enabling or disabling autonegotiation and auto-MDIX, see the *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Command Reference* and the *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Configuration Guide* on Cisco.com.

Verifying Port Connectivity

After you connect a device to a switch module port, the port LED is off while the switch module establishes a link. This process takes about 30 seconds. The LED turns green when the switch module and the attached device have an established link. If the LED is off, the device might not be turned on, there might be a cable problem, or there might be a problem with the adapter installed in the device.

Configuring the Switch

This section describes how to configure the switch and includes the following topics:

- [Assigning the IP Address on the switch module, page 4](#)
- [Initial Setup, page 6](#)

Assigning the IP Address on the switch module

When you first set up the switch module, use the blade enclosure Advanced Management Module (AMM) to enter the initial IP information. You can then access the switch module through the IP address for further configuration.



Caution

Do not connect devices to the external ports on the switch module until you have completed the setup procedures and your configuration matches that of the upstream network.

To assign an IP address to the switch module, perform the following steps:

- Step 1** Obtain the static IP address and the default gateway address from your system administrator.
- Step 2** Establish a connection to the AMM, as described in the *IBM BladeCenter Advanced Management Module User's Guide*. In the login window, enter your User ID and password, and click **Log In**.



Note AMM refers to the switch module as the *I/O module*.

- Step 3** In the Welcome window, click **Continue**.
The System Status summary pane appears.
- Step 4** In the I/O Module Advanced Setup area, expand I/O Module Tasks and click **Admin/Power/Restart** (see [Figure 2](#)).

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Figure 2 AMM I/O Module Admin/Power/Restart Window

IBM BladeCenter H Advanced Management Module

Welcome USERID

Bay 1: qa-bch-3-mm1

- Monitors
 - System Status
 - Event Log
 - LEDs
 - Power Management
 - Hardware VPD
 - Firmware VPD
 - Remote Chassis
- Blade Tasks
- I/O Module Tasks
 - Admin/Power/Restart**
 - Configuration
 - Firmware Update
- MM Control
- Service Tools

I/O Module Power/Restart

Select one or more module(s) using the checkboxes in the first column, select the desired action below the table, and then click

<input type="checkbox"/>	Bay	Type	Manufacturer	MAC Address	IP Address	Pwr	Unique ID Type	ID
<input type="checkbox"/>	1	Ethernet SM	CSCO (CSCO)	00:1E:F6:AF:66:80	172.29.237.243	On	n/a	n/a
	2	No Module						
	3	No Module						
	4	No Module						
	5	No Module						
	6	No Module						
<input type="checkbox"/>	7	Ethernet HSS	CSCO (CSCO)	00:05:AD:00:3D:C0	10.90.90.90	On	WWN	n/a
<input type="checkbox"/>	8	Ethernet HSS	BNT (BNT)	00:17:EF:D2:E0:02	192.168.70.134	On	n/a	n/a
	9	No Module						
	10	No Module						

† If this notation is shown next to an IP address, it means the address is the external stack management address.

Available actions

Power On Module(s)

I/O Module Advanced Setup

Select a module: I/O module 7

Fast POST: Enabled

External ports: Enabled

195030

- Step 5** From the External ports drop-down list, choose **Enabled** to enable external ports on the switch module.
- Step 6** Click **Save** to save your settings.
- Step 7** In the left pane, expand I/O Module Tasks, and click **Configuration**.
- Step 8** In the I/O Module Power/Restart area, check the check box for the bay that corresponds to the location of the I/O module (switch module) that you are configuring.

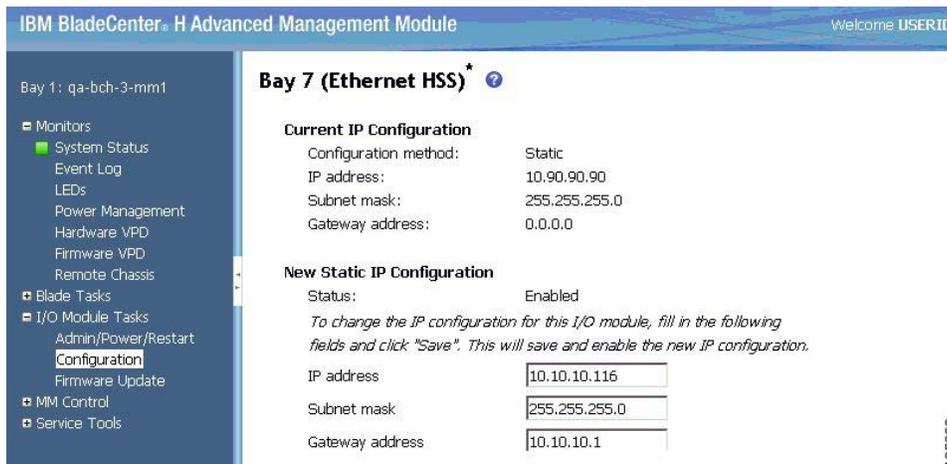


Note The switch module can only be installed in Bays 7 through 10.

The applicable bay number appears in the pane, followed by other related I/O-module information, including the IP address. The I/O-module information is divided into two areas: Current IP Configuration and New Static IP Configuration (see [Figure 3](#)).

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Figure 3 AMM I/O Module Configuration Window



Step 9 In the New Static IP Configuration area, enter the new IP address, the Subnet mask, and the Gateway address. Click **Save**.



Note The Save button is located in the lower, right portion of the window.

Step 10 Click the **Advanced Configuration** link. Take the following actions for switch module features:

- a. Enable external management for all ports.
- b. Preserve the new IP configuration on all resets.



Note These features are disabled, by default.

Step 11 (Optional) To begin a Telnet session to the switch module, click the **Start Telnet Session** link. Click **Start Telnet**.

Step 12 Click **Save** to save your settings. Exit the AMM web interface.

Initial Setup

To enter the basic configuration parameters, perform the following steps:

Step 1 Open the AMM and configure the IP address, subnet mask, and gateway address for the management interface (mgmt1), as described in [“Assigning the IP Address on the switch module”](#) section on page 4.

Step 2 Telnet to the mgmt1 IP address and log in using the following (default) user ID and password:

- Login ID is **USERID**.
- Password is **PASSWORD** (the 0 in PASSWORD is a zero).

You can now configure the switch module.

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Note Register the switch module device immediately with your supplier. Failure to register may affect response times for the initial service call. The device must be registered to receive entitled support services.

Step 3 Enter the basic configuration information.

The following example shows how to start the basic configuration setup:

```
n4k-8# setup
```

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of
the system. Setup configures only enough connectivity for management
of the system.
```

```
*Note: setup is mainly used for configuring the system initially,
when no configuration is present. So setup always assumes system
defaults and not the current system configuration values.
```

```
Press Enter at anytime to skip a dialog. Use ctrl-c at anytime
to skip the remaining dialogs.
```

Step 4 Enter the setup mode by entering **yes** (or **y**), as in the following example:

```
Would you like to enter the basic configuration dialog (yes/no): yes
```

Step 5 (Optional) Create additional accounts by entering **yes** (or **y**), as in the following example (no is the default):

```
Create another login account (yes/no) [n]: y
```

```
Enter the User login Id: <ID>
```

```
Enter the password for "qatest": <password>
```

```
Confirm the password for "qatest": <password>
```

```
Enter the user role [network-operator]: <role>
```

Step 6 (Optional) Configure an SNMP community string by entering **yes** (or **y**), as in the following example (no is the default):

```
Configure read-only SNMP community string (yes/no) [n]: y
```

```
SNMP community string: <string>
```

Step 7 Enter a name for the switch, as in the following example:

```
Enter the switch name: ibm-switch-1
```

Step 8 Configure out-of-band management by entering **yes** (or **y**), as in the following example:

```
Continue with Out-of-band (mgmt0) management configuration? (yes/no) [y]: y
```

```
Mgmt0 IPv4 address: 10.10.10.1
```

```
Mgmt0 IPv4 netmask: 255.255.255.0
```

Step 9 Configure the IPv4 default gateway (recommended) by entering **yes** (or **y**). Enter the gateway IP address.

```
Configure the default gateway? (yes/no) [y]: y
```

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IPv4 address of the default gateway: <IP address>

Step 10 Enable the Telnet service by entering **yes** (or **y**), as in the following example:

```
Enable the telnet service? (yes/no) [y]: y
```

Step 11 Enable the SSH service by entering **yes** (or **y**), as in the following example (the default is no):

```
Enable the ssh service? (yes/no) [n]:n
```

Step 12 Configure the NTP server by entering **yes** (or **y**), as in the following example (the default is no):

```
Configure the ntp server? (yes/no) [n]:n
```

Step 13 Configure the FCOE service by entering **yes** (or **y**), as in the following example (the default is no):

```
Enable FCOE service? (yes/no) [n]:n
```

After the prompt for the FCOE service, the configuration appears, as in the following example:

The following configuration will be applied:

```
username qatest password <user-password> role network-operator
snmp-server community tospin ro
switchname ibm-switch-1
interface mgmt0
ip address 10.10.10.1 255.255.255.0
no shutdown
ip route 0.0.0.0/0 10.10.10.100
telnet server enable
no ssh server enable
```

```
Would you like to edit the configuration? (yes/no) [n]:
```

```
Use this configuration and save it? (yes/no) [y]: y
```

Step 14 If you want to make changes to the displayed configuration, enter **yes** (or **y**); otherwise accept the default (no) by pressing **Enter**.

If you enter **yes**, the setup utility returns to the beginning of the setup, and repeats each step.

Step 15 Save this configuration by entering **yes** (or **y**), as in the following example (the default is no):

```
Use this configuration and save it? (yes/no) [y]: y
```

```
ibm-switch-1 #
```

If you do not save the configuration at this point, none of your changes are part of the configuration the next time the device reboots. Saving the configuration also automatically configures the boot variables for the kickstart and system images.



Note

The switch module has two out-of-band management interfaces. The AMM configuration is mgmt1. The mgmt0 interface must be placed on a different subnet than mgmt1.

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Managing the Switch

After you complete the initial switch module configuration, use the AMM, the CLI, or other management options (if available) for further configuration. This section describes the following topics:

- [Blade Enclosure Advanced Management Module, page 9](#)
- [Command-Line Interface, page 9](#)
- [Other Management Options, page 9](#)

Blade Enclosure Advanced Management Module

For standalone switch module units, you can use the AMM to configure and manage the switch module. See the *IBM BladeCenter Advanced Management Module User's Guide* for more information.

Command-Line Interface

You can enter Cisco Nexus-OS commands and parameters using the command-line interface (CLI). You can access the CLI by connecting your management station directly to the switch module console port or by using Telnet from a remote management station.

For more information about using the CLI, see the *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Command Reference*.

To connect to the switch module console port, perform the following steps:

-
- Step 1** Connect a console cable to the front panel serial port and connect an Ethernet cable to the front panel Ethernet management port.
 - Step 2** Start a terminal-emulation program on the PC.
 - Step 3** Configure the PC terminal emulation software for 9600 baud, 8 data bits, no parity, 1 stop bit and no flow control.
 - Step 4** Telnet to the switch module by using the console or Ethernet management interface.
Provide the login and password that was configured in [Step 3](#) of the “[Initial Setup](#)” section on [page 6](#).
 - Step 5** Use the CLI to enter commands to configure and manage the switch module.
-

Other Management Options

You can access the Cisco Management Information Base (MIB) variables through SNMP. The SNMP system consists of three parts: the SNMP manager, the SNMP agent, and the MIB. You can compile Cisco MIBs with your network management software. If SNMP is configured on a switch, the SNMP agent responds to MIB-related queries sent by the network management software.

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Related Documentation

For more information about the switch module, see the following documents on <http://www.cisco.com>:

- *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter Hardware Installation Guide*
- *Regulatory Compliance and Safety Information for the Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter*
- *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Command Reference*
- *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Configuration Guide*
- *Cisco Nexus 4001I and 4005I Switch Module for IBM BladeCenter NX-OS Release Notes*
- *Cisco NX-OS System Messages Reference*

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 Cisco technical documentation, at:

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

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