

Managing the Switch Module

After completing Express Setup and installing the switch module in your network, you can use these options for further configuration:

- Using the Device Manager
- Cisco Configuration Professional
- Other Management Options
- Accessing the Switch Module, page 4-2
- Connecting Devices to the Switch Module, page 4-4

Using the Device Manager

The simplest way to manage the switch module is with the Device Manager in the switch module memory. This web interface offers quick configuration. You can access the device manager from anywhere in your network through a web browser.

Follow these steps to use the Device Manager:

Step 1 Open a web browser, enter the switch module IP address, and then press **Enter**.

Step 2 Use the Device Manager for basic switch module configuration. See the Device Manager online help for more information.

Cisco Configuration Professional

Cisco Configuration Professional (CCP) is a software program that you can download from Cisco.com and run on your PC. It offers advanced options for configuring and monitoring multiple devices, including the switch module. Configuration Professional is free—there is no charge to download, install, or use it.

Follow these steps to use CCP:

Step 1 Go to this URL: http://www.cisco.com/en/US/products/ps9422/index.html

Note You must be a registered Cisco.com user, but you need no other access privileges.

Step 2 Click **Download Software**.

Step 3 Select the latest release of the Configuration Professional installer, and click **Download**.

Note Cisco Configuration Professional 2.5 or later is supported on the switch module.

Step 4 Run the Configuration Professional installer, and follow the directions.

Step 5 Click **Finish** to complete the installation.

See the Configuration Professional Getting Started Guide and online help for more information.

Other Management Options

You can use SNMP management applications such as CiscoWorks LAN Management Solution (LMS) and Cisco netManager to configure and manage the switch module. You also can manage the switch module from an SNMP-compatible workstation that is running platforms such as Cisco netManager or SunNet Manager.

The Cisco Configuration Engine is a network management device that works with embedded Cisco Networking Services (CNS) agents in the switch software. You can use it to automate initial configurations and configuration updates on the switch.

Accessing the Switch Module

Note The Cisco CGR 2010 router must be running Cisco IOS Release 15.1(4)M or higher to run the switch module.

After the Ethernet switch module is installed on the router, you see a new Gigabit Ethernet interface *0/x/0* (where x is the slot number) recognized by the Cisco IOS. The output shown in Table 6 is taken after two Ethernet switch modules are installed on the router:

```
Router1#show ip interface brief
```

Table 4-1 Output for Gigabit Ethernet Interface Recognized on the Ethernet Switch Module

Interface	IP Address	OK?	Method	Status	Protocol
GigabitEthernet0/0	60.60.60.1	YES	NVRAM	down	down
GigabitEthernet0/1	80.80.80.1	YES	manual	up	up
GigabitEthernet0/0/0	100.0.0.1	YES	manual	up	up
GigabitEthernet0/2/0	200.0.0.1	YES	NVRAM	up	up

The **service-module gigabitEthernet 0/x/0 session** command is the privileged EXEC mode command used to console into the Ethernet switch module from the host router.

You need to console into the switch module in order to configure it. In order to console into the switch module, you must configure an IP address on the internal backplane Gigabit Ethernet interface, that is, GE0/0/0 or GE0/2/0, connected to the switch module. If you try to console into the switch module without assigning an IP address, you receive the following error message:

```
Router1#service-module gigabitEthernet 0/2/0 session
IP address needs to be configured on interface GigabitEthernet0/2/0
```

To access the switch module from the host router:

	Command	Purpose
Step 1	**Router> enable**	Log into the Cisco CGR 2010 router in privileged EXEC mode. Enter your password if prompted.
Step 2	Router# **show running interface gigabitethernet0/**<*slot*>**/0**	Displays the running interface of the router, which should have a Gigabit Ethernet interface representing the switch module.
Step 3	Router# **configure terminal**	Enters global configuration mode.
Step 4	Router(config)# **interface gigabitethernet 0/**<*slot*>**/0**	Enters interface configuration mode, and specifies the Gigabit interface used to access the switch module.
Step 5	Router(config-if)# **ip address 20.0.0.1 255.255.255.0**	Configures the IP address and subnet mask for the interface.
Step 6	Router(config-if)# **no shutdown**	Enables the switch module port.
Step 7	Router(config-if)# **end**	Returns to privileged EXEC mode.
Step 8	**Router# service-module** <*interface*>**<***slot/subslot/port***> session** **Example:** Router> **service-module gigabitethernet0/**<*slot*>**/0 session**	Establishes a session from the router over the internal backplane Gigabit Ethernet interface to the switch module.
Step 9	Switch#	After you execute the **service-module** <*interface*> **session** command, the switch module prompt appears and you have full access to the switch module.

Disconnecting from the Switch Module

To disconnect from the switch module and return to the host Cisco CGR 2010 router:

	Command	Purpose
Step 1	**Switch> enable**	Enters privileged EXEC mode on the switch module.
Step 2	**Switch# show ip interface brief**	Displays the brief version of the switch module configuration information.

	Command	Purpose
Step 3	`Switch# <Ctrl+Shift+6> x`	Press **<Ctrl+Shift+6>**, then press **x**. This sequence returns you to the router console while keeping the console session to the switch module intact and then exits the console session to the switch module.
Step 4	`Router# disconnect`	Terminates the console session to the switch module.
Step 5	`Router# <Enter>`	Press **Enter** to confirm the disconnect.
Step 6	`Router# service-module gigabitethernet 0/0/0 status`	Displays the status of all the vital components of the switch module. For example output, see the "Service-Module Command Syntax" section in Chapter 3, "Accessing the Switch Module From the Host Router" in the *Cisco 2010 Connected Grid Ethernet Switch Module Interface Card Software Configuration Guide*.

Connecting Devices to the Switch Module

This section describes how to connect various devices to the switch module ports.

Tip If you cannot reach the bale-clasp handle with your fingers when removing RJ-45 or SFP cables from the switch module, use the straight tool provided to gently release the bale-clasp handle.

- 10/100BASE-T Ports, page 4-4
- SFP Module Slots, page 4-5
- Dual-Purpose Port with RJ-45 and SFP Connectors, page 4-7
- Dual-Purpose Port with RJ-45 and SFP Connectors, page 4-7

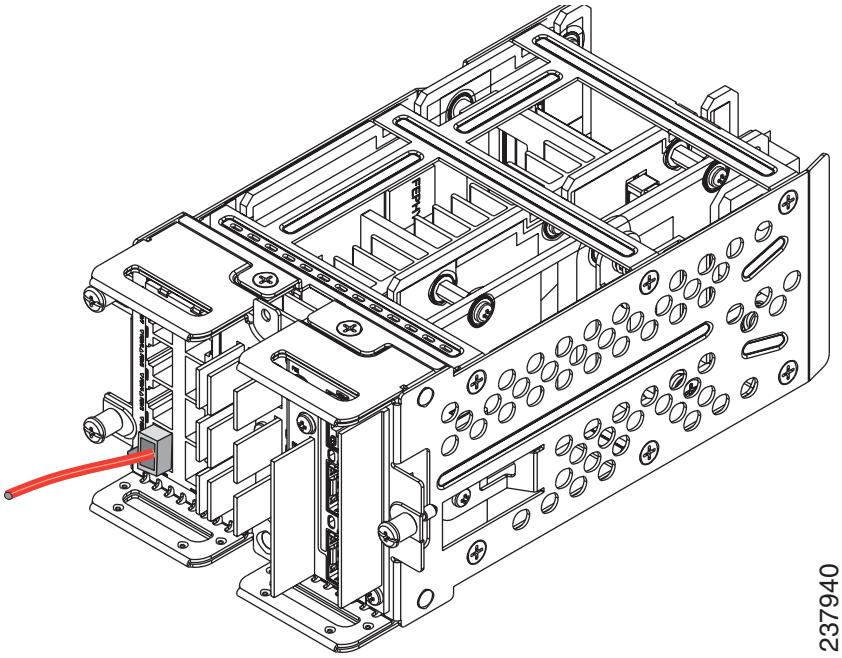
10/100BASE-T Ports

Follow these steps to connect to the 10/100BASE-T ports:

Step 1 When you connect to servers, workstations, IP phones, wireless access points, and routers, use a straight-through, twisted four-pair, Category 5 cable to connect to the 10/100BASE-T RJ-45 connector. Use a crossover, twisted four-pair, Category 5 cable when you connect to other switches, hubs, or repeaters.

Note The first four 10/100BASE-T ports on the GRWIC-D-ES-2S-8PC switch module have PoE+ capability. See the *Cisco Connected Grid Ethernet Switch Module Interface Card Software Configuration Guide* for more information.

Figure 4-1 RJ-45 Ports



Step 2 Connect the cable to the RJ-45 port on the other device.

Note The automatic medium-dependent interface crossover (auto-MDIX) feature is enabled by default. The switch detects the required cable type for copper Ethernet connections and configures the interfaces. You can use either a crossover or a straight-through cable for connections to a 10/100/1000 RJ-45 port on the switch module, regardless of the type of connected device.

SFP Module Slots

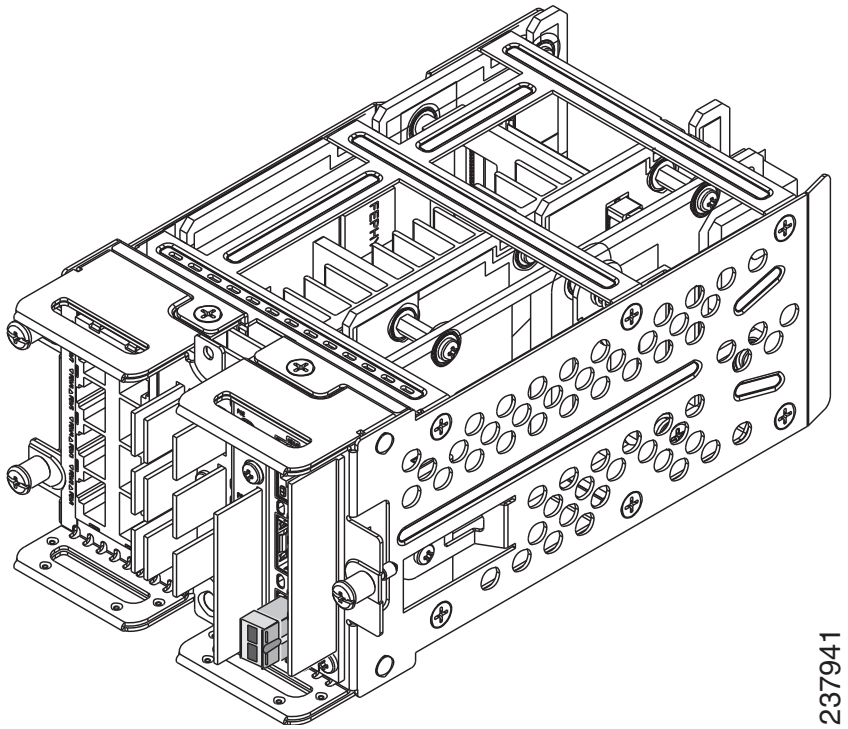
The switch module provides two 100/1000 Mb/s or Gigabit Ethernet SFP module slots ports: one standard Gigabit SFP module slot in the center (labeled *GE0/2*) and one SFP module slot for the dual-purpose port on the bottom (labeled *GE0/1*).

To connect to an SFP module slot:

Step 1 Grasp the SFP module on the sides, and insert it into the SFP module slot port until you feel the connector snap into place.

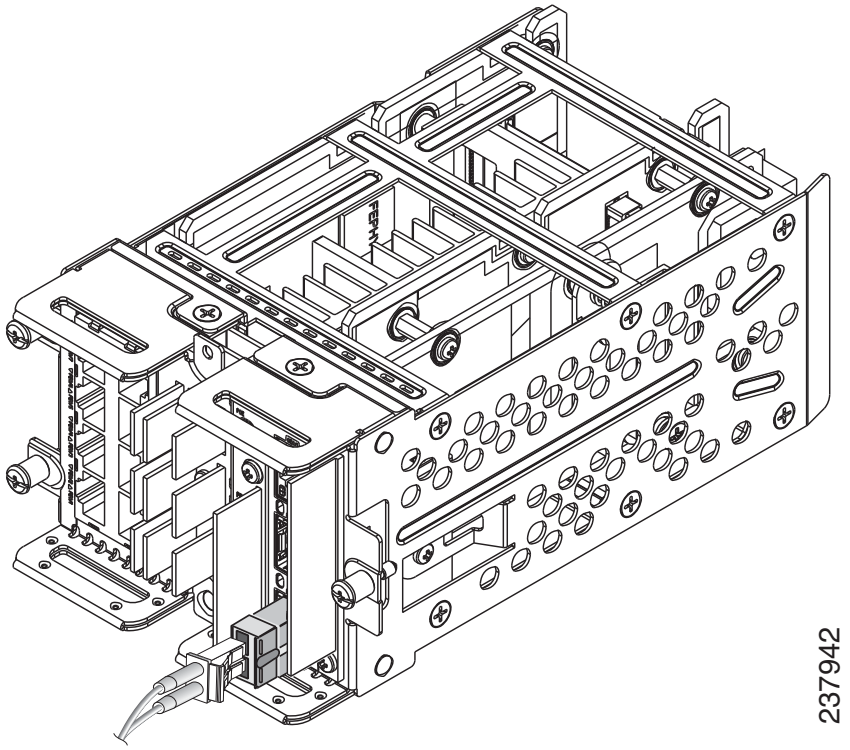
Caution Make sure that SFP module is right side up before attempting to insert the SFP module into the slot.

Figure 4-2 SFP Module Ports



Step 2 Connect the SFP cable into the SFP module slot, and insert the other cable end into the other device.

Figure 4-3 Connecting the Cable into the SFP Port



For detailed instructions on installing, removing, and connecting to SFP modules, see the SFP module documentation.

Dual-Purpose Port with RJ-45 and SFP Connectors

The Gigabit Ethernet port GE0/1 on the switch module consists of a pair of one RJ-45 connector (topmost port) and one SFP module connector (bottom port).

This dual-purpose port is considered as a single interface. The two connectors are not redundant interfaces—the switch module activates only one connector of the pair at a time.

If the dual-purpose port is configured as media-type RJ-45, the speed of the connection can be manually set to either 10, 100 or 1000 Mb/s (10/100/1000BASE-T specifications). The default speed setting is always enabled to AUTONEGOTIATION. It will automatically negotiate to whatever speed is set on the other end of the connection.

If the dual-purpose port is configured as media-type SFP**,** the speed is dependent on the module type you are using, either a 100FX or a 1000BASE-X SFP module. The port will automatically detect the module, and the speed is set based on the media type. The other end of the connection will have to be of the same media type in order to establish the link.

Note Even when operating at 100 Mb/s, the dual-purpose ports (and the SFP-only module slots) use the frame size that is set with the **system mtu jumbo** global configuration command.

By default, the dual-purpose ports and the SFP-only module slots are network node interfaces (NNIs).

By default, the switch module dynamically selects the dual-purpose port media type that first links up. However, you can use the **media-type** interface configuration command to manually select the RJ-45 connector or the SFP module slot.

Note In **auto-select** mode, if both copper and fiber-optic signals are simultaneously detected, the switch module gives preference to SFP mode.

For configuration information, see “Configuring a Dual-Purpose Port” in Chapter 8, “Configuring Interfaces,” in the *Cisco 2010 Connected Grid Ethernet Switch Module Interface Card Software Configuration Guide*.

The following illustration shows an Ethernet cable connected to the RJ-45 connector of the dual-purpose port (GE0/1). It also shows an SFP cable connected to the standard SFP module slot (GE0/2).

Figure 4-4 Ethernet Cable Connected to the RJ-45 Connector

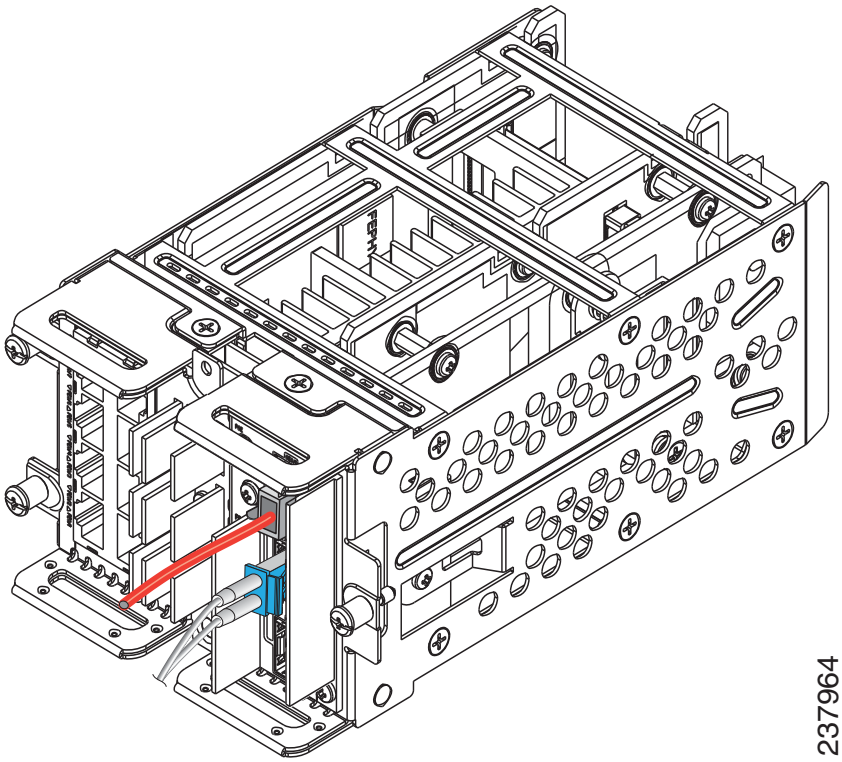
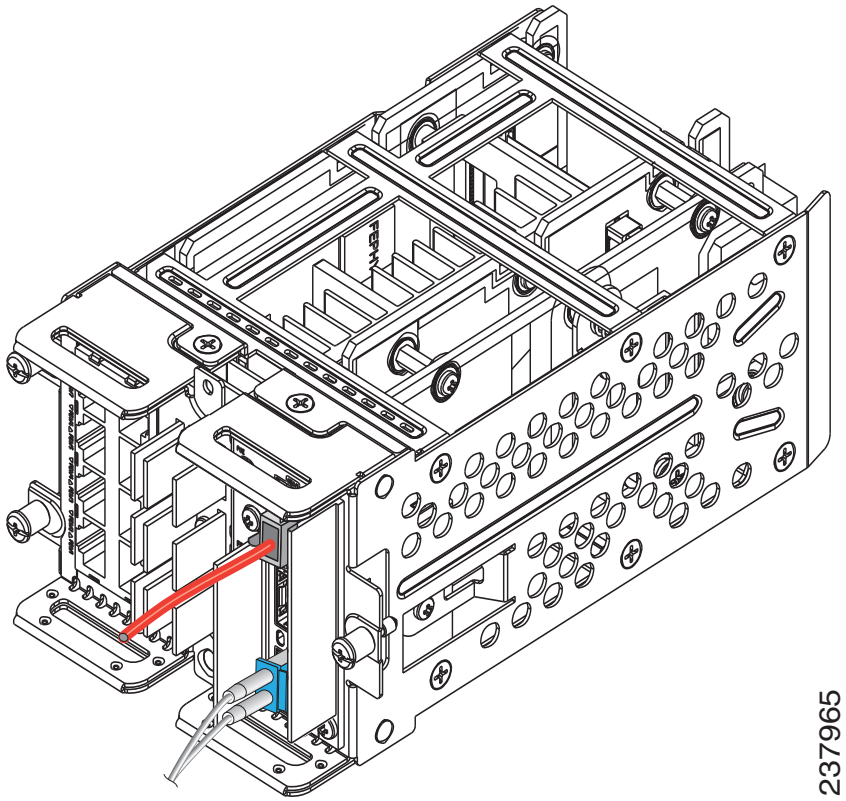


Figure 4-5 shows both connectors of the dual-purpose port being used. In this case, with both an RJ-45 cable and an SFP module cable in their respective GE0/1 ports, the switch module will provide reference to the SFP module slot.

Figure 4-5 Dual-Purpose Connectors



Verifying Port Connectivity

After you connect the switch module port and another device, the port LED turns amber while the switch module establishes a link. This process takes about 30 seconds, and then the LED turns green. If the LED turns off, the target device might not be turned on, there might be a cable problem, or there might be a problem with the adapter in the target device.