



Connecting the Cisco MDS 9396T Switch

The Cisco MDS 9396T switch provides the following types of ports:

- Console port—An RS-232 port that you can use to create a local management connection.
- MGMT 10/100/1000 Ethernet ports—Two Ethernet ports that you can use to access and manage the switch by IP address, such as through the CLI or Fabric Manager. One of the Ethernet ports can also be used to export analytic data.
- Fibre Channel ports—Fibre Channel ports that you can use to connect to the SAN, or for in-band management.
- USB port—USB port that you can use for configuration file backups, and capturing logs to file.

This chapter describes how to connect the various components of the Cisco MDS 9396T switch.

- [Preparing for Network Connections, on page 1](#)
- [Connecting the Console Port, on page 1](#)
- [Connecting the Management Port, on page 3](#)
- [Connecting to a Fibre Channel Port, on page 4](#)
- [Powering Up the Switch, on page 8](#)

Preparing for Network Connections

When preparing your site for network connections to the Cisco MDS 9396T switch, consider the following for each type of interface:

- Cabling required for each interface type
- Distance limitations for each signal type
- Additional interface equipment needed

Before installing the component, have all additional external equipment and cables available.

Connecting the Console Port

This section describes how to connect the RS-232 console port to a PC. The console port allows you to perform the following functions:

- Configure the switch from the CLI.
- Monitor network statistics and errors.
- Configure SNMP agent parameters.
- Download software updates to the switch or distribute software images residing in flash memory to attached devices.
- Perform initial switch configuration
- Perform password recovery

Connecting the Console Port to a PC

You can connect the console port to a PC serial port for local administrative access to the Cisco MDS 9396T switch.



Note The PC must support VT100 terminal emulation. The terminal emulation software—frequently a PC application such as HyperTerminal Plus—makes communication between the Cisco MDS 9396T switch and your PC possible during setup and configuration.

To connect the console port to a PC, follow these steps:

-
- Step 1** Configure the baud rate and character format of the PC terminal emulation program to match the following management port default characteristics:
- 9600 baud
 - 8 data bits
 - 1 stop bit
 - No parity
- Step 2** Connect the supplied RJ-45 to DB-9 female adapter or RJ-45 to DB-25 female adapter (depending on your PC connection) to the PC serial port.
- Step 3** Connect one end of the supplied console cable (a rollover RJ-45 to RJ-45 cable) to the console port. Connect the other end to the RJ-45 to DB-9 (or RJ-45 to DB-25) adapter at the PC serial port.
-

Connecting a Modem to a Console Port



Caution Do not connect the console port to a modem while the switch is booting. Connect the console port to a modem either before powering the switch on or after the switch has completed the boot process.

To connect the console port to a modem before the switch is powered on, follow these steps:

-
- Step 1** Connect the supplied console cable (a rollover RJ-45 to RJ-45 cable) to the console port.
- Step 2** Connect the other end of the console cable to the supplied RJ-45 to DB-25 adapter.
- Step 3** Connect the RJ-45-to-DB-25 adapter to the DB-25 port on the modem.
- Step 4** Power on the switch. The switch boots automatically, and the following default console port characteristics are applied to the modem connection:
- 9600 baud
 - 8 data bits
 - 1 stop bit
 - No parity
 - Default initialization string (ATE0Q1&D2&C1S0=1\015) if previously configured

Note For instructions on how to change these settings, see the [Cisco Fabric Manager Fundamentals Configuration Guide](#) for instructions on how to change these settings.

To connect the console port to a modem after the switch is powered on, follow these steps:

-
- Step 1** Ensure that the system has completed booting and the system image is running.
- Step 2** Connect the supplied console cable (a rollover RJ-45 to RJ-45 cable) to the console port.
- Step 3** Connect the other end of the console cable to the supplied RJ-45 to DB-25 adapter.
- Step 4** Connect the RJ-45-to-DB-25 adapter to the DB-25 port on the modem.
- Step 5** Initialize and configure the modem as specified in the [Cisco Fabric Manager Fundamentals Configuration Guide](#) and the [Cisco NX-OS Fundamentals Configuration Guide](#).

Connecting the Management Port

The autosensing 10/100/1000 Mbps Ethernet management ports are located on the left side of the front panel (labeled MGMT ETH0 and MGMT ETH1), below the console port. MGMT ETH0 is the default Ethernet management port (interface mgmt0). This port is used for out-of-band management of the Cisco MDS 9396T switch and data streaming to remote receivers.



Note The MGMT ETH1 port is disabled in Cisco MDS NX-OS Release 8.3(1).

Use a modular, RJ-45, straight-through UTP cable to connect the management ports to an external hub or switch. To connect to a router, use a crossover cable.

Connecting to a Fibre Channel Port

The Fibre Channel ports in the Cisco MDS 9396T switch are compatible with LC-type fiber-optic SFP+ transceivers and cables (see the [Removing and Installing Cables into SFP Transceivers](#) section). You can use these ports to connect to the SAN or for in-band management. For information about configuring the switch for in-band management, see the [Cisco Fabric Manager Fundamentals Configuration Guide](#) and the [Cisco NX-OS Fundamentals Configuration Guide](#).

Each transceiver must match the transceiver on the other end of the cable, and the cable must not exceed the stipulated cable length for reliable communications. SFP+ transceivers can be ordered separately or with the Cisco MDS 9396T switch.



Warning **Class 1 laser product.** Statement 1008



Warning **Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.** Statement 1051



Note Wear an ESD wrist strap connected to the chassis when handling transceivers. Keep optical connectors covered when not in use, and do not touch connector ends. The fiber-optic connectors must be free of dust, oil, and other contaminants.

Removing and Installing SFP+ Transceivers



Warning Removing and installing an SFP+ transceiver can shorten its useful life. Do not remove and insert SFP+ transceivers more often than is absolutely necessary. We recommend disconnecting cables before installing or removing SFP+ transceivers to prevent damage to the cable or transceiver.



Note Use only Cisco SFP+ transceivers on the Cisco MDS 9396T switch. Each Cisco SFP+ transceiver is encoded with model information that enables the switch to verify that the SFP+ transceiver meets the requirements for the switch.

The Cisco MDS 9396T switch supports SFP+ transceivers with the following two types of latching devices:

- Mylar tab latch
- Bale-clasp latch

Figure 1: SFP+ Transceiver with Mylar Tab Latch

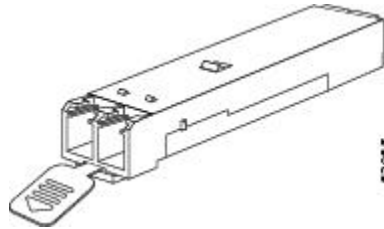
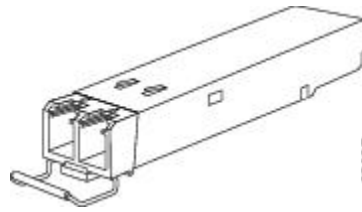


Figure 2: SFP+ Transceiver with Bale-Clasp Latch



Installing an SFP+ Transceiver

To install an SFP+ transceiver, follow these steps:

-
- Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.
- Step 2** Remove the dust plug from the switch port cage.
- Step 3** Insert the transceiver into the port:
- If the transceiver has a mylar tab latch, orient the transceiver with the tab on the bottom, and then gently insert the transceiver into the port until it clicks into place.
 - If the transceiver has a bale-clasp latch, orient the transceiver with the bale clasp on the bottom, close the bale clasp by pushing it up and over the transceiver, and then gently insert the transceiver into the port until it clicks into place.
- Caution** The transceiver can only be inserted one way into the switch port. If the transceiver does not install easily, ensure it is correctly oriented and the tab or clasp are in the correct position before continuing.
- Step 4** Insert or leave the dust plug in the cable end of the transceiver if a cable is not being installed in the transceiver.
-

Removing an SFP Transceiver

To remove an SFP transceiver, follow these steps:

-
- Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.
- Step 2** Perform these steps if cable is installed in the transceiver:
- a. Record the cable and port connections for later reference.
 - b. Press the release latch on the cable, grasp the connector near the connection point, and gently pull the connector from the transceiver.

- c. Insert a dust plug into the connector on the cable.
- d. Insert a dust plug into the cable end of the transceiver.

Tip If the transceiver does not remove easily in the next step, push the transceiver all the way back in and then ensure that the latch is in the correct position before continuing.

Step 3 Remove the transceiver from the port:

- If the transceiver has a mylar tab latch, gently pull the tab straight out (do not twist), and then pull the transceiver out of the port.
- If the transceiver has a bale-clasp latch, open the clasp by pressing it downwards, and then pull the transceiver out of the port.

Step 4 Insert a dust cover into the port end of the transceiver and place the transceiver on an antistatic mat or into a static shielding bag if you plan to return it to the factory.

Step 5 Protect the optical cage by inserting a clean cover if another transceiver is not being installed.

Removing and Installing Cables into SFP Transceivers



Caution To prevent damage to the fiber-optic cables, do not place more tension on them than the rated limit and do not bend to a radius of less than one inch if there is no tension in the cable, or two inches if there is tension in the cable.

Installing a Cable into an SFP+ Transceiver

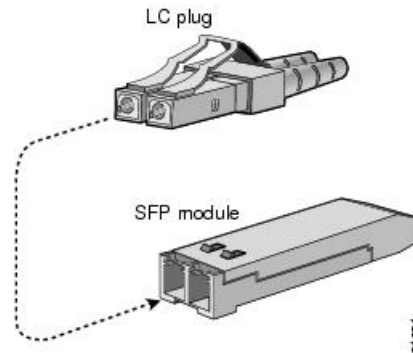


Caution To prevent possible damage to the cable or transceiver, install the transceiver in the port before installing the cable in the transceiver.

To install a cable into a transceiver, follow these steps:

- Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.
- Step 2** Remove the dust cover from the connector on the cable.
- Step 3** Remove the dust cover from the cable end of the transceiver.
- Step 4** Align the cable connector with the transceiver and insert the connector into the transceiver until it clicks into place.

Figure 3: Connecting an LC-Type Cable to a Fibre Channel Port



Caution The LC connector has keys to allow insertion only one way into the transceiver. If the cable does not install easily, ensure it is correctly oriented before continuing.

For instructions on verifying connectivity, see the [Cisco Fabric Manager Fundamentals Configuration Guide](#) and the [Cisco NX-OS Fundamentals Configuration Guide](#).

Removing a Cable from an SFP Transceiver



Caution When pulling a cable from a transceiver, grip the body of the connector. Do not pull on the jacket sleeve, because this can compromise the fiber-optic termination in the connector.



Caution If the cable does not remove easily, ensure that any latch present on the cable has been released before continuing.

To remove the cable, follow these steps:

- Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.
- Step 2** Press the release latch on the cable, grasp the connector near the connection point, and gently pull the connector from the transceiver.
- Step 3** Insert a dust plug into the cable end of the transceiver.
- Step 4** Install a dust cover over the end of the cable.

Maintaining SFP Transceivers and Fiber-Optic Cables

SFP transceivers and fiber-optic cables must be kept clean and dust-free to maintain high signal accuracy and prevent damage to the connectors. Attenuation (loss of light) is increased by contamination, and it should be kept below 0.35 dB.

Follow these maintenance guidelines:

- SFP transceivers are static sensitive. To prevent ESD damage, wear an ESD-preventive wrist strap that is connected to the chassis while handling transceivers.
- Do not remove and insert a transceiver more often than necessary. Repeated removals and insertions can shorten its useful life.
- Keep all optical connections covered when not in use. If they become dusty, clean them before using to prevent dust from scratching the fiber-optic cable ends.
- Do not touch ends of connectors. This prevents fingerprints and other contamination of the connectors.
- Clean regularly; the required frequency of cleaning depends upon the environment. In addition, clean connectors if they are exposed to dust or accidentally touched. Both wet and dry cleaning techniques can be effective; refer to your site's fibre-optic connection cleaning procedures.
- Inspect routinely for dust and damage. If damage is suspected, clean and then inspect fiber ends under a microscope to determine if damage has occurred.

Powering Up the Switch

To power up the switch, you must connect one or two power supplies to AC power sources. The number of power supplies and power sources used depends on the following conditions:

- If you are using combined power (not using power redundancy), you must connect one power supply to one AC power source.
- If you are using power supply (n+1) redundancy, you must connect two power supplies to one AC power source.
- If you are using grid (n+n) redundancy, you must use two power supplies and two AC power sources—you must connect each power supply to a different power source.

Before you begin

You must have the following before powering up the switch:

- Switch installed in a rack and connected to an earth ground
- Recommended power cable for your nation or region
- AC power source with the required amperage located within reach of the power cable being used

Step 1 Connect a power supply to an AC power source as follows:

- a. Using the recommended power cable for your country or region, connect the C19 plug on the power cable to the power receptacle on the power supply.
- b. Connect the other end of the power cable to the AC power source.
- c. Verify that the LED is on and green. If the LED is off, check the AC power source circuit breaker to be sure that it is turned on.

Step 2 If you are using the power supply (n+1) redundancy, you must connect the second power supply as follows:

- a. Using the recommended power cable for your country or region , connect the C19 plug on the power cable to the power receptacle on the second power supply.
- b. Connect the other end of the power cable to the AC power source used by the other power supply.
- c. Verify that the LED is on and green. If the LED is off, check the AC power source circuit breaker to be sure that it is turned on.

Step 3

If you are using the grid (n+n) redundancy, you must connect the second power supply as follows:

- a. Using the recommended power cable for your country or region , connect the C19 plug on the power cable to the power receptacle on the second power supply.
 - b. Connect the other end of the power cable to a second AC power source (this is a different power source than the one used by the first power supply).
 - c. Verify that the LED is on and green. If the LED is off, check the AC power source circuit breaker to be sure that it is turned on.
-

