



## CHAPTER 3

# Connecting the Switch

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This chapter describes how to connect the Cisco Nexus 5500 Platform and Cisco Nexus 5000 Platform switches to the following types of ports:

- Console port —An RS-232 port that you can use to create a local management connection.
- Ethernet ports, both encrypted and unencrypted—These ports can be used to connect to a LAN.
- Fibre Channel ports—These ports can be used to connect to a SAN.



### Caution

When running power and data cables in overhead or subfloor cable trays, we strongly recommend that you locate power cables and other potential noise sources as far away as practical from network cabling that terminates on Cisco equipment. In situations where long parallel cable runs cannot be separated by at least 3.3 ft (1 m), we recommend that you shield any potential noise sources by housing them in a grounded metallic conduit.

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This chapter includes the following sections:

- [Preparing for Network Connections, page 3-2](#)
- [Connecting to the Console Port, page 3-2](#)
- [Connecting to the Ethernet Connector Port, page 3-3](#)
- [Connecting to an Ethernet Port, page 3-4](#)
- [Connecting to a Fibre Channel Port, page 3-7](#)
- [Maintaining SFP Transceivers and Fiber-Optic Cables, page 3-11](#)

# Preparing for Network Connections

When preparing your site for network connections to the Cisco Nexus 5500 Platform switch or Cisco Nexus 5000 Platform switch, consider the following for each type of interface, and gather all the required equipment before connecting the ports:

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

## Connecting to the Console Port



**Note**

This section applies to the Cisco Nexus 5500 Platform switches and the Cisco Nexus 5000 Platform switches.

The console port is an RS-232 port with an RJ-45 interface. (See [Figure 3-1](#).) The console port is an asynchronous (async) serial port; any device connected to this port must be capable of asynchronous transmission.

We recommend using this port to create a local management connection to set the IP address and other initial configuration settings before connecting the switch to the network for the first time.

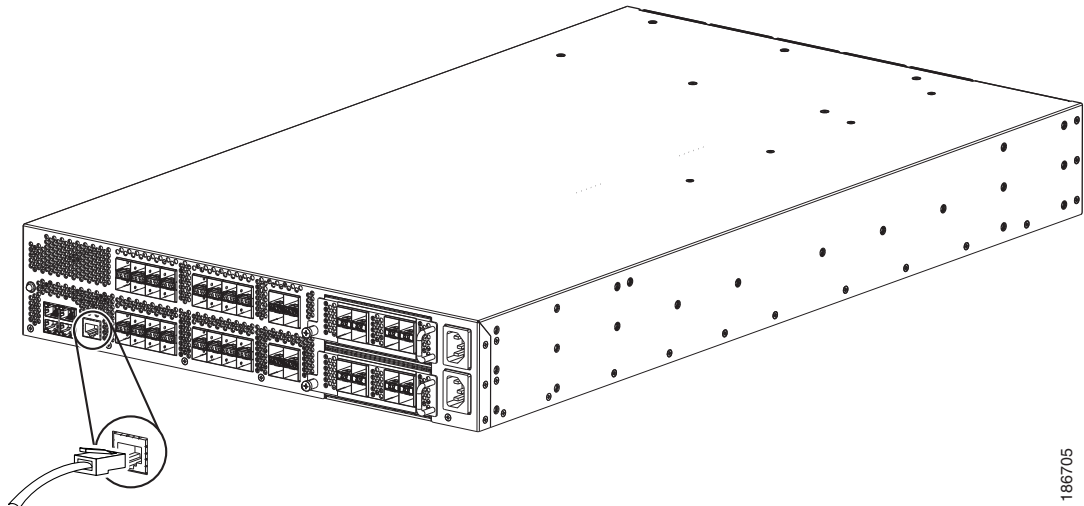


**Caution**

The console port can be used to connect to a modem. If you do not connect it to a modem, connect it either before powering the switch on or after the switch has completed the boot process.

[Figure 3-1](#) shows how to connect to the console port on the Cisco Nexus 5000 Platform switch. The process is identical for the Cisco Nexus 5500 Platform switch.

**Figure 3-1** Connecting to the Console Port on a Cisco Nexus 5000 Platform Switch



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You can use the console port to perform the following:

- Configure the Cisco Nexus 5500 Platform switch or Cisco Nexus 5000 Platform switch from the CLI.
- Monitor network statistics and errors.
- Configure SNMP agent parameters.
- Download software updates.

**Note**

To connect the console port to a computer terminal, the computer must support VT100 terminal emulation. The terminal emulation software (such as HyperTerminal or Procomm Plus) makes communication between the Cisco Nexus 5500 Platform switch or Cisco Nexus 5000 Platform switch and a computer possible during setup and configuration.

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

- Step 1** Configure the terminal emulator program to match the following default port characteristics: 9600 baud, 8 data bits, 1 stop bit, no parity.
- Step 2** Connect the RJ-45 connector of the console cable to the console port (see [Figure 3-1](#)) and the DB-9 connector to the computer serial port.

**Note**

For configuration instructions, see the appropriate Cisco Nexus 5000 Series CLI configuration guide.

## Connecting to the Ethernet Connector Port

**Note**

This section applies to the Cisco Nexus 5500 Platform switches and the Cisco Nexus 5000 Platform switches.

**Caution**

To prevent an IP address conflict, do not connect the management port to the network until the initial configuration is complete. For configuration instructions, see the Cisco Nexus 5000 Series CLI configuration guide.

This section describes how to connect the Ethernet connector port to an external hub, switch, or router. The Ethernet connector port has an RJ-45 interface. To connect the Ethernet connector port to an external hub, switch, or router, follow these steps:

- Step 1** Connect the appropriate modular cable to the Ethernet connector port:
- Use modular, RJ-45, straight-through UTP cables to connect the Ethernet connector port to an Ethernet switch port or hub.
  - Use a cross-over cable to connect to a router interface.

**Step 2** Connect the other end of the cable to the device.

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## Connecting to an Ethernet Port

To connect to an Ethernet port, you must install SFP+ transceivers and connect them with optical cables.

This section includes the following topics:

- [Installing and Replacing SFP+ Transceivers, page 3-4](#)
- [Installing Cables into SFP+ Transceivers, page 3-6](#)

## Installing and Replacing SFP+ Transceivers



### Caution

Excessively removing and installing an SFP+ transceiver can shorten its life. Unless it is absolutely necessary, do not remove and insert SFP+ transceivers. To prevent damage to the cable and transceiver, we recommend that you disconnect cables before installing or removing SFP transceivers.

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This section includes the following topics:

- [Installing an SFP+ Transceiver, page 3-4](#)
- [Replacing an SFP+ Transceiver, page 3-5](#)

## Installing an SFP+ Transceiver

To install an SFP+ transceiver, follow these steps:

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- Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.
- Step 2** Remove the dust cover from the port cage.
- Step 3** Remove the dust cover from the port end of the transceiver.
- Step 4** Insert the transceiver into the port as follows:
- If the transceiver has a Mylar tab latch, position 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, position the transceiver with the clasp on the bottom, close the clasp by pushing it up over the transceiver, and then gently insert the transceiver into the port until it clicks into place.



### Caution

If the transceiver does not install easily, ensure that it is correctly positioned and the tab or clasp are in the correct position before continuing.

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**Note** If you cannot install the cable into the transceiver, insert or leave the dust plug in the cable end of the transceiver.

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## Replacing an SFP+ Transceiver

To replace an SFP+ transceiver, follow these steps:

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**Step 1** Attach an ESD-preventive wrist strap and follow its instructions for use.

**Step 2** If a cable is installed in the transceiver, do the following:

- 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 cable end of the transceiver.



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**Caution** If the transceiver does not remove easily in the next step, push the transceiver completely in and then ensure that the latch is in the correct position before continuing.

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**Step 3** Remove the transceiver from the port as follows:

- 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 downward, and then pull the transceiver out of the port.

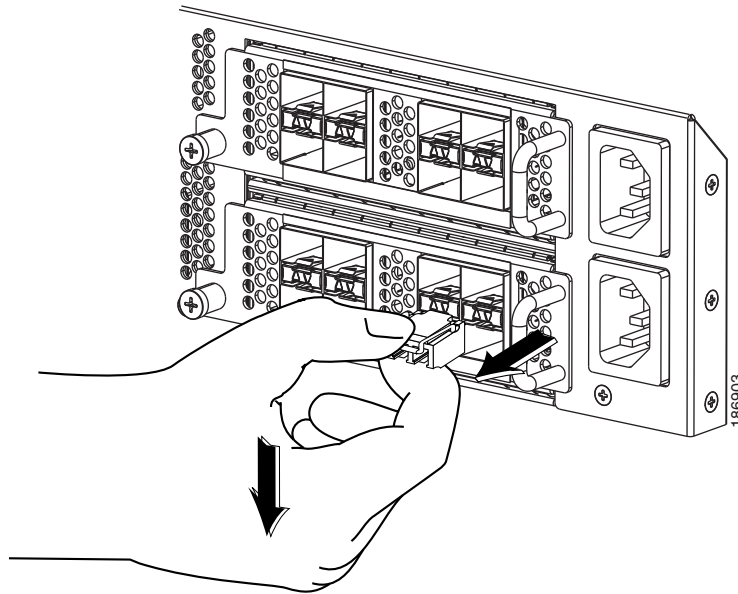


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**Note** If you have difficulty removing a bale clasp SFP+ transceiver, you should reseal it by returning the bale clasp latch to the up position. Press the SFP+ transceiver inward and upward into the cage. Next, lower the bale clasp latch and pull the SFP+ transceiver straight out with a slight upward lifting force (see [Figure 3-2](#)). Be careful not to damage the port cage during this process.

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**Figure 3-2** Alternate Removal Method for Bale Clasp SFP+ Transceivers



- 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** Install a replacement transceiver (see the [“Installing an SFP+ Transceiver”](#) section on page 3-4). If another transceiver is not being installed, protect the optical cage by inserting a clean cover.

## Installing Cables into SFP+ Transceivers



### Caution

To prevent damage to the copper cables, do not place more tension on them than the rated limit and do not bend to a radius of less than 1 inch (2.54 cm) if there is no tension in the cable, or 2 inches (5.08 cm) if there is tension in the cable.

This section includes the following topics:

- [Installing a Cable into an SFP+ Transceiver, page 3-6](#)
- [Replacing a Cable for an SFP+ Transceiver, page 3-7](#)

## 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.

**Caution**

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If the cable does not install easily, ensure that it is correctly positioned before continuing.

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For instructions on verifying connectivity, see the appropriate Cisco Nexus 5000 Series CLI configuration guide.

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## Replacing a Cable for an SFP+ Transceiver

**Caution**

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

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**Caution**

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

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To remove the cable, follow these steps:

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- 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** Either install a replacement cable in the SFP+ transceiver (see the [“Installing a Cable into an SFP+ Transceiver”](#) section on page 3-6) or insert dust plugs into the cable end of the transceiver and the end of the removed cable.
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## Connecting to a Fibre Channel Port

You can use an SFP transceiver to connect to a Fibre Channel port.

This section includes the following topics:

- [Removing and Installing SFP Transceivers, page 3-8](#)
- [Removing and Installing Cables into SFP Transceivers, page 3-10](#)
- [Maintaining SFP Transceivers and Fiber-Optic Cables, page 3-11](#)

## Removing and Installing SFP Transceivers

**Caution**

Excessively removing and installing an SFP transceiver can shorten its life. Do not remove and insert SFP transceivers more often unless it is absolutely necessary. We recommend that you disconnect the cables before installing or removing SFP transceivers to prevent damage to the cable or transceiver.

This section includes the following topics:

- [Installing an SFP Transceiver, page 3-8](#)
- [Removing an SFP Transceiver, page 3-8](#)

### 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 cover from the port cage.
- Step 3** Remove the dust cover from the port end of the transceiver.
- Step 4** Insert the transceiver into the port as follows:
  - If the transceiver has a Mylar tab latch, position 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, position the transceiver with the clasp on the bottom, close the clasp by pushing it up over the transceiver, and then gently insert the transceiver into the port until it clicks into place.

**Caution**

If the transceiver does not install easily, ensure that it is correctly positioned and the tab or clasp are in the correct position before continuing.

**Note**

If you cannot install the cable into the transceiver, insert or leave the dust plug in the cable end of 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** If a cable is installed in the transceiver, do the following:
  - 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 cable end of the transceiver.

**Caution**

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

**Step 3**

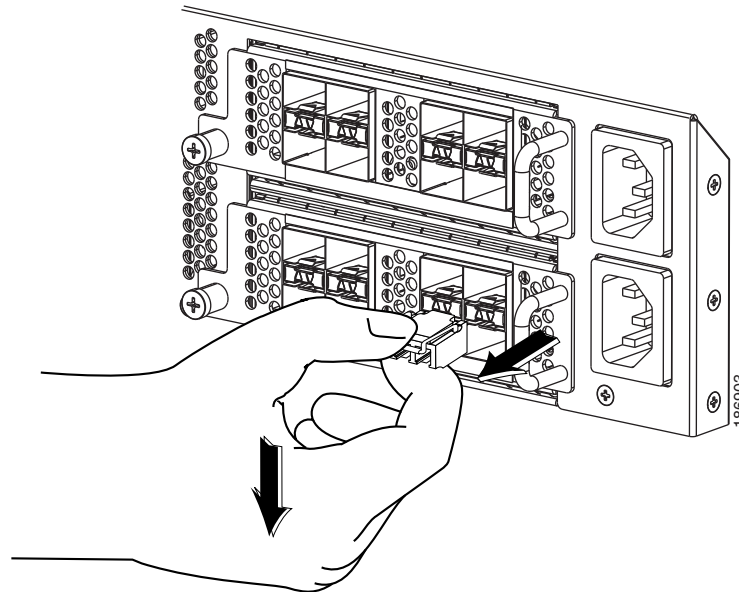
Remove the transceiver from the port as follows:

- 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 downward, and then pull the transceiver out of the port.

**Note**

If you have difficulty removing a bale clasp SFP transceiver, you should reseal the SFP by returning the bale clasp to the up position. Press the SFP inward and upward into the cage. Next, lower the bale clasp latch and pull the SFP straight out with a slight upward lifting force (see [Figure 3-3](#)). Be careful not to damage the port cage during this process.

**Figure 3-3** Alternate Removal Method for Bale Clasp SFP Transceivers

**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**

If another transceiver is not being installed, protect the optical cage by inserting a clean cover.

## 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 1 inch (2.54 cm) if there is no tension in the cable, or 2 inches (5.08 cm) if there is tension in the cable.

This section includes the following topics:

- [Installing a Cable into an SFP Transceiver, page 3-10](#)
- [Removing a Cable from an SFP Transceiver, page 3-11](#)

### Installing a Cable into an SFP Transceiver

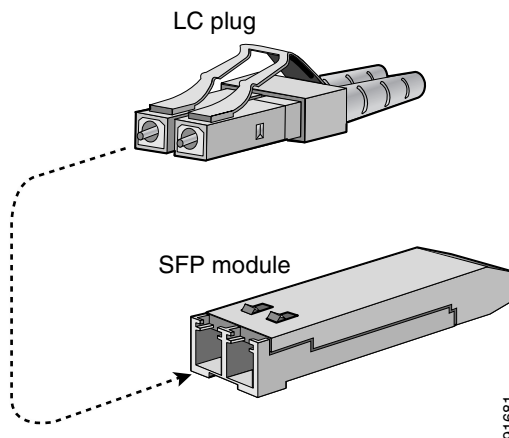
**Caution**

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. (See [Figure 3-4](#)).

**Figure 3-4** Connecting the LC-Type Cable to a Fibre Channel Port

**Caution**

If the cable does not install easily, ensure that it is correctly positioned before continuing.

For instructions on verifying connectivity, see the appropriate Cisco Nexus 5000 Series CLI Configuration Guide.

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## 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 action can compromise the fiber-optic termination in the connector.

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**Caution**

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

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To remove the cable, follow these steps:

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- 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** Insert a dust plug onto the end of the cable.
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## 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 should be below 0.35 dB.

Consider the following maintenance guidelines:

- SFP transceivers are static sensitive. To prevent ESD damage, wear an ESD-preventive wrist strap that is connected to the chassis.
- Do not remove and insert a transceiver more often than is necessary. Repeated removals and insertions can shorten its useful life.
- Keep all optical connections covered when not in use. If they become dusty, clean before using to prevent dust from scratching the fiber-optic cable ends.
- Do not touch ends of connectors to prevent fingerprints and other contamination.
- 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 fiber-optic connection cleaning procedure.
- 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.

