



# CHAPTER 3

## Installing the Switch

---

**Revised: January 4, 2012**

This chapter describes how to install the Catalyst 4948E switch in an equipment rack.

- [Preparing to Install the Chassis, page 3-1](#)
- [Rack-Mounting the Chassis, page 3-5](#)
- [Installing the System Ground, page 3-10](#)
- [Connecting Power to the Switch, page 3-12](#)
- [Attaching the Interface Cables, page 3-15](#)
- [Powering Up the Switch, page 3-21](#)



**Note**

---

Before starting the installation procedures in this chapter, complete the site planning checklist in [Chapter 2, “Preparing for Installation”](#) to verify that all planning activities were completed.

---

## Preparing to Install the Chassis

This section covers these topics:

- [Warnings, page 3-2](#)
- [Verifying Package Contents, page 3-4](#)
- [Required Tools, page 3-4](#)
- [Lifting the Chassis Safely, page 3-5](#)



**Tip**

---

For additional information about the Cisco Catalyst 4948E and the Catalyst 4948E-F switches (including configuration examples and troubleshooting information), see the documents listed on this page:

[http://www.cisco.com/en/US/products/ps6021/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps6021/tsd_products_support_series_home.html)

---

## Warnings

The installation-applicable warnings are listed below. Warning translations in multiple languages are provided in Appendix D. Refer to the statement number for the translations.

**Warning**

**To prevent the switch from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104°F (40°C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.** Statement 17

**Warning**

**This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.** Statement 37

**Warning**

**This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.** Statement 39

**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 stack the chassis on any other equipment. If the chassis falls, it can cause severe bodily injury and equipment damage.** Statement 48

**Warning**

**Ethernet cables must be shielded when used in a central office environment.** Statement 171

**Warning**

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

**Warning**

**Read the installation instructions before connecting the system to the power source.** Statement 1004

**Warning**

**To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

**Warning**

**Class 1 laser product.** Statement 1008

**Warning**

**This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.**

Statement 1017

**Warning**

**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.**

Statement 1030

**Warning**

**Ultimate disposal of this product should be handled according to all national laws and regulations.**

Statement 1040

**Warning**

**This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.** Statement 1045

**Warning**

**When installing or replacing the unit, the ground connection must always be made first and disconnected last.** Statement 1046

**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

**Warning**

**Installation of the equipment must comply with local and national electrical codes.** Statement 1074

## Verifying Package Contents

Carefully remove the chassis and accessory kit from the shipping container, and check each item for damage. If any item is missing or damaged, contact your Cisco representative or reseller for support. Return all packing material to the shipping container, and save it.

The chassis is shipped with these items in the accessory kit:

- One RJ-45 female-to-DB-9 female adapter plug
- System ground kit
- Rack-mounting kit that contains the following items:
  - Two 19-inch rack-mounting brackets
  - Eight M4 x 8 mm Phillips flat-head screws for attaching the brackets to the switch
  - Four 12-24 x 3/4-inch and four 10-32 x 3/4-inch Phillips machine screws for attaching the rack-mount brackets to a rack
  - Disposable ESD wrist strap



**Note** A console cable is not provided in the accessory kit. It can be ordered as an option.

## Required Tools

To properly install the chassis, you need the following tools and equipment:

- No. 1 Phillips screwdriver
- No. 2 Phillips screwdriver
- 3/16-inch flat-blade screwdriver
- Antistatic mat or antistatic foam
- Your own ESD grounding strap or the disposable ESD strap included with the system
- Tape measure and level
- Copper system ground wire (the required wire gauge is determined by local or national electrical codes)
- Source DC power cables (the required wire gauge is determined by local or national electrical codes)
- Either insulated crimp-on spade lugs or insulated crimp-on ring connectors (the required size and style is determined by local or national electrical codes)
- Wire-stripping tool
- Crimping tool

## Lifting the Chassis Safely

Whenever you lift a chassis, follow these guidelines:

- Always disconnect all external cables before lifting or moving the chassis.
- Ensure that your footing is solid, and balance the weight of the chassis between your feet.
- Lift the chassis slowly; never move suddenly or twist your body as you lift.
- Keep your back straight and lift with your legs, not your back. If you must bend down to lift the chassis, bend at the knees, not at the waist, to reduce the strain on your lower back muscles.

## Rack-Mounting the Chassis

There are three rack-mount kits and one cable management kit available for both the Catalyst 4948E and the Catalyst 4948E-F switch chassis. Additionally, there is one optional inlet air duct kit that is available only for the Catalyst 4948E-F switch. [Table 3-1](#) lists the kits and describes their contents.

**Table 3-1      Catalyst 4948E and Catalyst 4948E-F Chassis Rack-Mount and Cable Management Kits**

Kit Part Number	Description
69-2037-xx	Standard rack-mount kit for both chassis. Kit includes brackets and screws. The kit ships with the chassis as part of the accessory kit. Installation instructions are located in this chapter.
WS-X4948E-19CNTR=	Center rack-mount kit for 19-inch racks. Kit includes brackets and screws. The kit is available as a separately orderable option. Installation instructions are contained in a separate installation note available on cisco.com.
WS-X4948E-23CNTR=	Center rack-mount kit for 23-inch racks. Available for both chassis. Kit includes brackets and screws. The kit is available as a separately orderable option. Installation instructions are contained in a separate installation note available on cisco.com.
69-1303-xx	Cable management bracket kit. Kit includes the cable management bracket and screws. The kit ships with both chassis. Installation instructions are located in this chapter.
Panduit Corp. model CDE2	Modular ToR switch inlet air duct kit. The kit includes a switch ducting enclosure, one switch support bracket, and installation hardware. The kit is an option, orderable from Panduit Corp. The kit is used only when installing the Catalyst 4948E-F switch chassis and only when installing the chassis in a hot isle and cold isle data center environment. Installation instructions for the kit are provided in a separate installation note supplied with the air duct kit.

The process for installing the Catalyst 4948E switch in a 19-inch rack is divided into the following topics:

- [Attaching the Rack-Mount Brackets to the Chassis, page 3-6](#)
- [Installing the Chassis in the Rack, page 3-7](#)
- [Installing the Cable Guide \(Optional\), page 3-8](#)

## Attaching the Rack-Mount Brackets to the Chassis

Two rack-mount brackets are included as part of the rack-mount kit (69-2037-xx) supplied with both switch chassis. The rack-mount brackets can be installed either on the front sides of the chassis or on the rear sides of the chassis. The rack-mount brackets are intended for use in mounting the chassis in a standard 19-inch (48.3 cm). This rack-mount kit is not suitable for racks with obstructions (such as power strips) that could impair access to the switch.

**Note**

If you are installing the Catalyst 4948E-F switch chassis in a hot isle and cold isle data center environment and plan on using the optional modular ToR switch inlet duct kit (Panduit model CDE2), you must install the rack-mount brackets to the front of the chassis.

To install the rack-mount brackets on the front sides of the chassis, follow these steps:

---

**Step 1** Remove the two rack-mount brackets and eight M4 x 8 mm Phillips flat-head screws from the accessory kit.

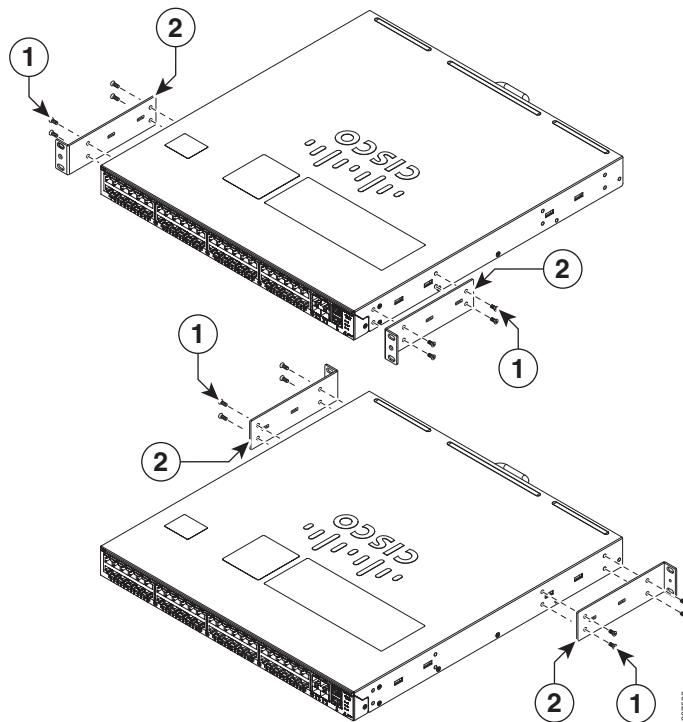
**Step 2** Position one of the rack-mount brackets against one side of the chassis, and align the countersunk screw holes with the M4 holes in the chassis. (See [Figure 3-1](#).)

**Note**

In [Figure 3-1](#), the top view shows the rack-mount brackets being attached to the front of the chassis. The bottom view shows the rack-mount brackets being attached to the rear of the chassis.

**Step 3** Secure the rack-mount bracket to the chassis with four M4 x 8 mm Phillips flat-screws.

**Step 4** Repeat Steps 2 and 3 for the second rack-mount bracket on the opposite side of the chassis.

**Figure 3-1** *Installing the Rack-Mount Brackets*


---

<b>1</b>	M4 screws (4 screws per bracket)	<b>2</b>	Rack-mount bracket
----------	----------------------------------	----------	--------------------

---

## Installing the Chassis in the Rack

To install the chassis in the rack, follow these steps:

**Step 1** Have one person carefully lift and position the chassis in front of the rack.

**Step 2** Position the chassis in the rack until the rack-mount bracket ears are in contact with the rack.



**Tip** Use a tape measure or a level to ensure that the chassis is installed level in the rack.

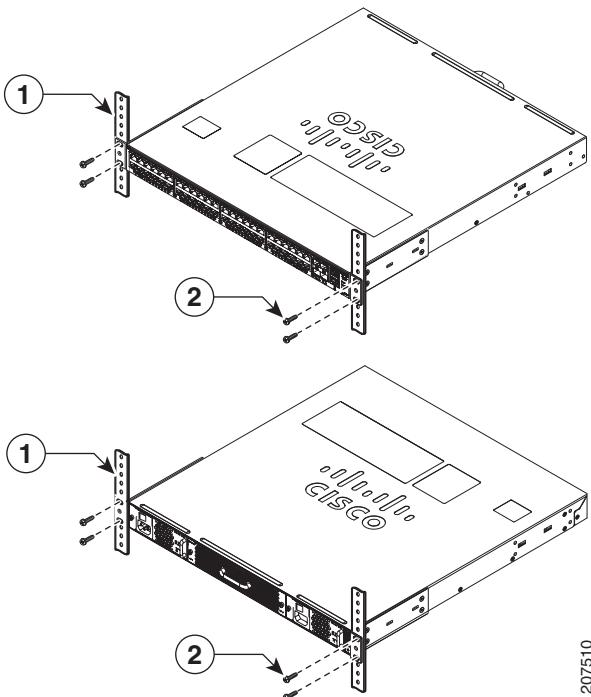
**Step 3** Adjust the chassis up or down in the rack until two screw holes in each rack-mount bracket ear are aligned with corresponding mounting holes in the equipment rack post. Place a level on top of the chassis and verify that the chassis is not tilted in the equipment rack.

**Step 4** While one person holds the chassis in place, secure the chassis to the rack with the four 10-32 x 3/4-inch or the four 12-24 x 3/4-inch Phillips-head machine screws (two on each side) that are supplied in the accessory kit.

**Rack-Mounting the Chassis****Note**

**Figure 3-2 (top view)** shows how to install a chassis in a rack when the chassis has the rack-mount brackets attached at the front of the chassis. **Figure 3-2 (bottom view)** shows how to install a chassis in a rack when the chassis has the rack-mount brackets attached at the rear of the chassis.

**Figure 3-2** *Installing the Chassis in the Rack*



207510

<b>1</b>	12-24 or 10-32 screws (2 per bracket)	<b>2</b>	Equipment rack post
----------	---------------------------------------	----------	---------------------

## Installing the Cable Guide (Optional)

One cable guide is provided in the accessory kit. The cable guide attaches to the rack-mount bracket using a single M4 screw (a threaded M4 hole is provided in the rack-mount bracket). The cable guide is designed to be used when the rack-mount brackets are attached to the front of the chassis and can be attached to either the left side or the right side of the chassis.

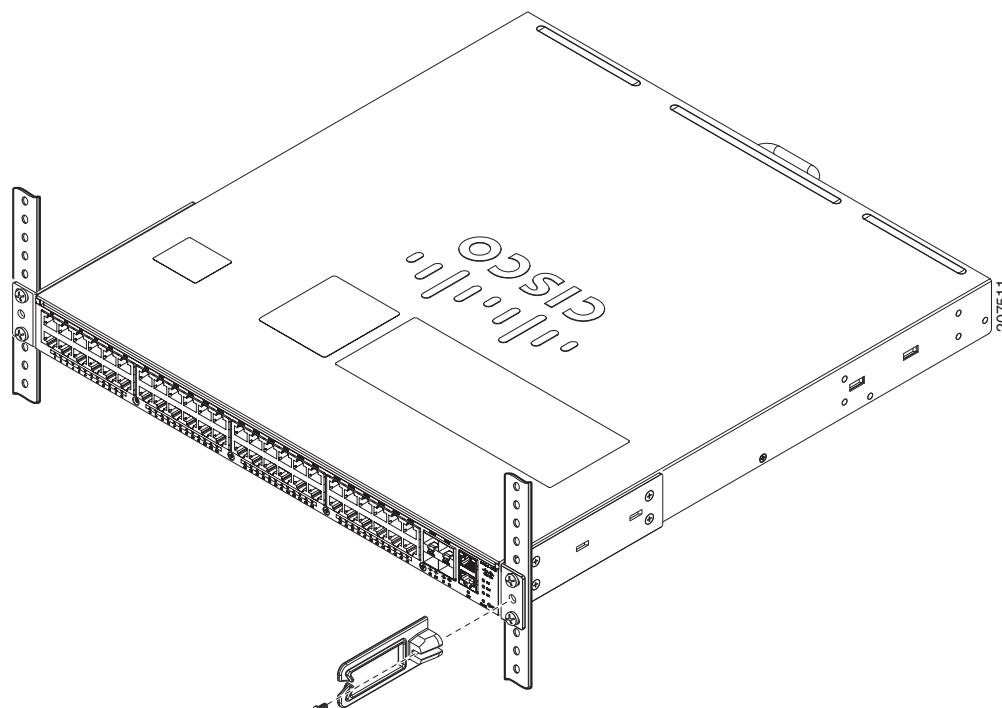
**Note**

If the chassis is mounted to the rear posts of the equipment rack, the cable guide cannot be installed.

To install the cable guide, follow these steps:

- 
- Step 1** Position the cable guide in front of either the left or right rack-mount bracket.
  - Step 2** Attach the cable guide to either the left or right rack-mount bracket using the single M4 screw provided. (See [Figure 3-3](#).)

**Figure 3-3** *Installing the Cable Guide*



---

## Installing the Catalyst 4948E-F Switch Chassis with the Optional Panduit Air Duct Kit

If you are installing the Catalyst 4948E-F switch chassis in a data center that is configured as hot aisle and cold aisle, you might need to install the Panduit Air Duct kit, Model CDE2. The kit extends the air intake from the rear of the chassis to the front of the equipment rack allowing the system to draw in cool air from the cool aisle. To install the air duct assembly, refer to the installation note that ships with the kit.

# Installing the System Ground

The system (NEBS) ground provides additional grounding for EMI shielding requirements and is intended to satisfy the Telcordia Technologies NEBS requirements for supplemental bonding and grounding connections.

To connect the system ground, you need the following tools and materials:

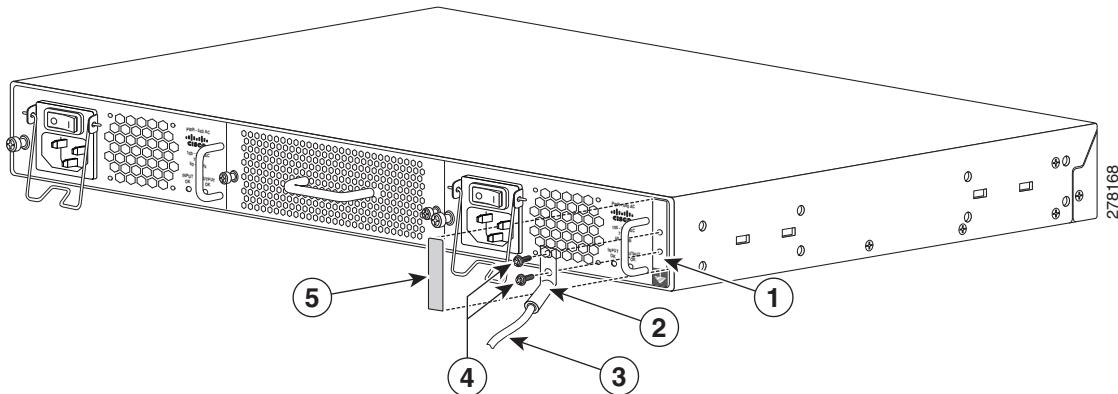
- Ground lug—A two-hole standard 90-degree barrel lug. Supports up to 6 AWG wire.
- Ground lug screws—Two M4 x 8 mm pan-head screws.
- Ground wire—The system ground wire should be sized according to local and national installation requirements. Depending on the power supply and system, a 12 AWG to 6 AWG copper conductor is required for U.S. installations. We recommend that you use commercially available 6 AWG wire. The length of the system ground wire depends on the proximity of the switch to proper grounding facilities.
- No. 1 Phillips screwdriver.
- Wire-stripping tool to remove the insulation from the ground wire.
- Crimping tool to crimp the system ground wire to the ground lug.



**Note** The grounding lug and the grounding lug screws are supplied as part of the accessory kit. The grounding wire and the tools are not supplied as part of the accessory kit.

To attach the system ground wire to the ground lug and attach the lug to the grounding pad, follow these steps:

- 
- Step 1** If you are using insulated wire, use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the ground wire. If you are using bare wire, go to Step 2.
  - Step 2** Insert the stripped end of the ground wire into the open end of the ground lug.
  - Step 3** Crimp the ground wire in the barrel of the ground lug. Verify that the ground wire is securely attached to the ground lug.
  - Step 4** Remove the yellow label covering the chassis system ground pad on the back of the chassis. (See [Figure 3-4](#).)
  - Step 5** Place the ground wire lug against the system ground pad, making sure that there is solid metal-to-metal contact.
  - Step 6** Secure the ground lug to the chassis with the two M4 screws supplied in the accessory kit. (See [Figure 3-4](#).) Route the system ground wire ensuring that it does not interfere with other switch hardware or rack equipment.
  - Step 7** Prepare the other end of the ground wire, and connect it to an appropriate earth ground point in your site to ensure adequate earth ground for the switch.

**Figure 3-4** *Installing the System Ground*

<b>1</b>	Chassis grounding pad	<b>4</b>	M4 screws (2X)
<b>2</b>	System ground lug	<b>5</b>	Adhesive label (yellow). Covers grounding pad.
<b>3</b>	System ground wire		

# Connecting Power to the Switch

This section provides instructions on connecting source power to the chassis. Two procedures are provided:

- [Connecting AC Source Power to the Switch, page 3-12](#)
- [Connecting DC Source Power to the Switch, page 3-13](#)



**Note** The Catalyst 4948E switch supports mixing AC-input and DC-input power supplies in the same chassis.

## Connecting AC Source Power to the Switch

To connect source AC power to either a Catalyst 4948E or Catalyst 4948E-F switch, follow these steps:

- 
- Step 1** Verify that all of the site power and grounding requirements described in [Chapter 2, “Preparing for Installation”](#) have been met and the chassis is properly grounded as described in the [“System Grounding” section on page 2-7](#).
- Step 2** Verify that the power supply is fully seated in the chassis power supply bay and that the captive installation screw on the power supply is tight. Verify that the AC power switch on the power supply is off.



**Warning** **The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.** Statement 1019

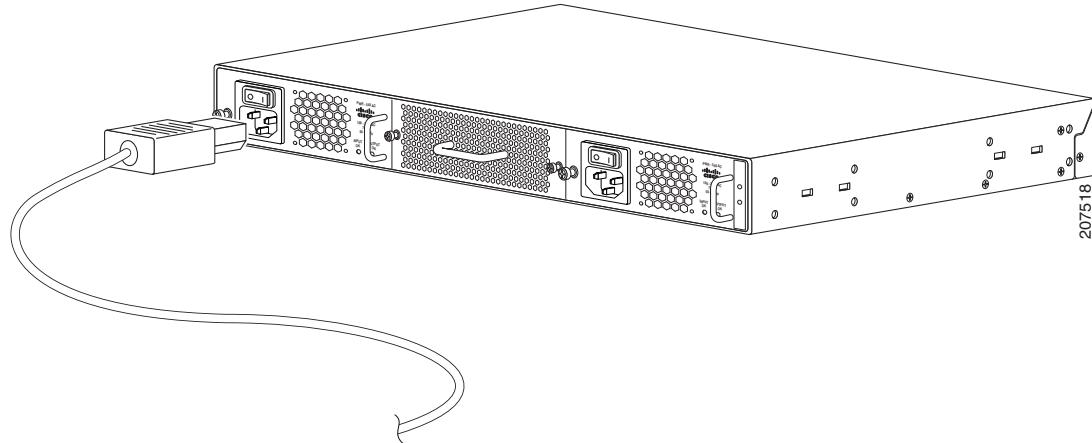
---

- Step 3** Remove the AC power cords from the accessory kit and verify that you have the correct ones for your locale. If you are unsure as to the type of AC power cord required for your location, refer to the [“300 W AC-Input Power Supply Power Cords” section on page A-8](#) for a list of the AC power cords supported by the AC-input power supplies and consult with your local electrician.
- Step 4** Plug the AC power cord’s appliance connector (IEC60320/C15) into the power supply AC-in receptacle. [Figure 3-5](#) shows plug locations for both the PWR-C49E-300AC-R and the PWR-C49E-300AC-F power supplies.



**Note** If you are using the optional Panduit Modular ToR Switch Inlet Duct kit (Model CDE2) with the Catalyst 4948E-F switch chassis, you need to thread the AC power cord through the air duct. Refer to the installation note supplied with the duct kit for instructions on how to do this.

---

**Figure 3-5** Connecting Source AC to the AC-Input Power Supply

- Step 5** Connect the other end of the power cord to an AC-power input source. If two power supplies will be used to power the chassis, make sure that each AC-input power supply is plugged into its own dedicated circuit.



**Note** If you have only one power supply installed in the chassis, you must cover the empty power supply bay with a blank power supply cover (Cisco p/n 800-25264-01). The blank power supply cover maintains EMI shielding and proper air flow through the chassis.

- Step 6** Do not turn on the AC-input power supply power on/off switch at this time. Continue the installation process by attaching the interface cables to the chassis ports.

## Connecting DC Source Power to the Switch



**Warning**

**Before performing any of the following procedures, ensure that power is removed from the DC circuit.**  
Statement 1003



**Warning**

**This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.**  
Statement 1017



**Warning**

**This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.**  
Statement 1045



**Warning**

**Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place.**  
Statement 1075

**■ Connecting Power to the Switch**

To connect source DC power to the DC-input power supply installed in the Catalyst 4948E switch, follow these steps:

- 
- Step 1** Verify that all of the site power and grounding requirements described in “[Power Requirements](#)” section on page 2-11 have been met and the chassis is properly grounded.
- Step 2** Verify that power is off to the DC circuit you are going to attach to the DC-input power supply. As an added precaution, place the appropriate safety flag and lockout devices at the source power circuit breaker, or place a piece of adhesive tape over the circuit breaker handle to prevent accidental power restoration while you are working on the circuit.
- Step 3** Connect the DC cables to the source DC circuit breaker.
- Step 4** Verify that the DC-input power supply is fully seated in the chassis power supply bay and that the captive installation screw on the power supply is tight.
- Step 5** Remove the snap-on plastic safety cover from the DC-input power supply terminal block.
- Step 6** Attach the appropriate size and type of lugs to the source DC cables.

Either insulated crimp-on spade lugs or insulated crimp-on ring connectors can be used on the source DC cables. They should be sized according to local and national installation requirements and electrical codes.



**Note** The wire should be sized according to local and national installation requirements and electrical codes. Use only copper wire.

---

- Step 7** Connect the source DC cable lugs to the power supply terminal block posts in this order (see [Figure 3-6](#)):
- Ground cable lug to the power supply ground terminal post.
  - Negative (–) source DC cable lug to the power supply negative (–) terminal post.
  - Positive (+) source DC cable lug to the power supply positive (+) terminal post.
- Step 8** After ensuring that all of the cable connections are secure, reinstall the terminal block cover.



**Caution** To prevent a short circuit or shock hazard after wiring the DC-input power supply, you must reinstall the terminal block cover.

---

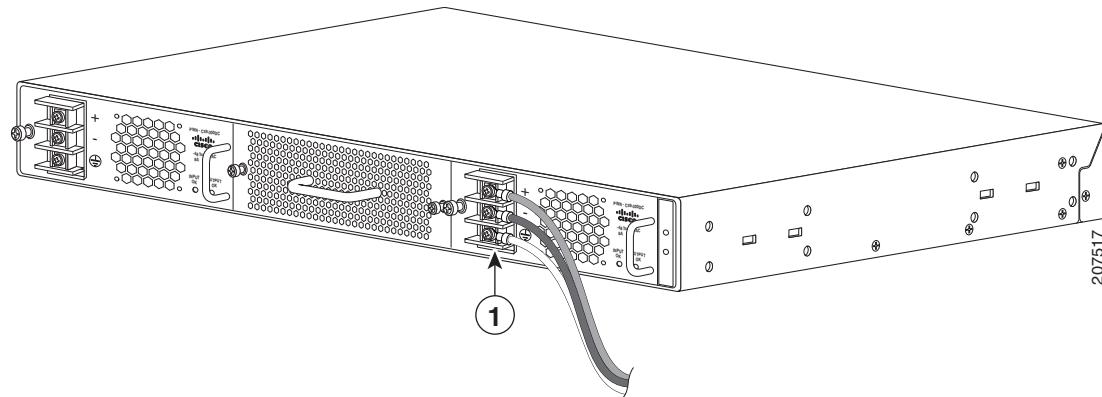


**Caution** In a system with dual DC-input power supplies, connect each power supply to a separate power source. In case of a power source failure to one supply, the second power source should still be available.

---

- Step 9** Do not turn source DC power on at this time. Continue the installation process by attaching the interface cables to the chassis ports.

**Figure 3-6** Connecting Source DC to the DC-Input Power Supply (PWR-C49-300DC)



- |          |  |  |  |
|----------|--|--|--|
| <b>1</b> | Attach the source DC leads to the power supply terminal block in the following order: <ul style="list-style-type: none"><li>• Ground</li><li>• (–) negative</li><li>• (+) positive</li></ul> |  |  |
|----------|--|--|--|

## Attaching the Interface Cables

This section covers attaching the interface cables to the chassis front panel connectors. The section is divided into the following topics:

[Connecting to the Downlink Ports, page 3-16](#)

[Installing Uplink Port Transceivers and Cables, page 3-16](#)

[Connecting to the Ethernet Management Port, page 3-20](#)

[Connecting to the Console Port, page 3-20](#)

## Connecting to the Downlink Ports

Both chassis have 48 10/100/1000 ports. The ports configure themselves to operate at the speed of the attached devices. If the attached devices do not support autonegotiation, you can explicitly set the speed and duplex parameters.

To attach network cables to the downlink ports, follow these steps:

- 
- Step 1** Connect the RJ-45 plug at one end of the network cable to the target device port.
  - Step 2** Connect the RJ-45 plug at the other end of the network cable to a downlink port on the Catalyst 4948E chassis.
  - Step 3** Repeat Steps 1 and 2 for the remaining downlink ports.
- 

## Installing Uplink Port Transceivers and Cables

The four uplink ports on the Catalyst 4948E support either 1000BASE-X SFP or 10GBASE SFP+ transceivers. SFP transceivers can have three types of latching devices to secure an SFP transceiver in a port socket:

- [Figure 3-7](#) shows an SFP transceiver with a Mylar tab latch.
- [Figure 3-8](#) shows an SFP transceiver with an actuator button latch.
- [Figure 3-9](#) shows an SFP transceiver that has a bail-clasp latch.

Determine which type of latch your SFP transceiver uses before following the installation and removal procedures.



**Caution**

Do not install or remove the SFP transceiver with fiber-optic cables attached to it. Doing so may damage cables, cable connectors, or the optical interfaces and may interfere with the SFP transceiver latching properly into its socket connector. Disconnect all cables before removing or installing an SFP transceiver.

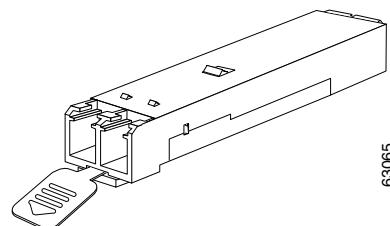
Removing and installing an SFP transceiver can shorten its useful life. Do not remove and insert SFP transceivers more often than is absolutely necessary.

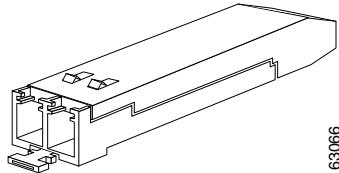
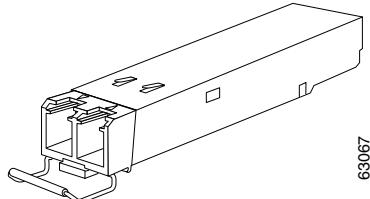


**Caution**

The SFP transceivers are static-sensitive devices. Always use an ESD wrist strap or similar individual grounding device when handling SFP transceivers.

**Figure 3-7 SFP Transceiver with a Mylar Tab Latch**

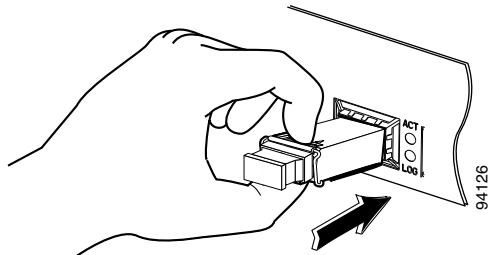


**Figure 3-8 SFP Transceiver with an Actuator Button Latch****Figure 3-9 SFP Transceiver with a Bail-Clasp Latch**

To install either an SFP or SFP+ transceiver, follow these steps:

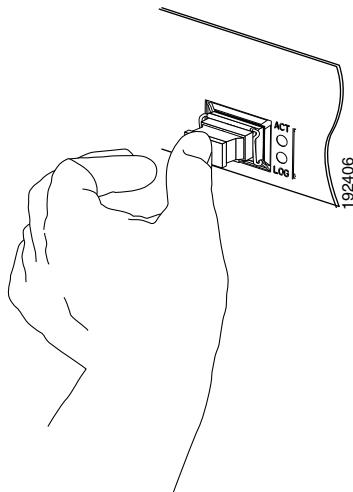
- 
- Step 1** Attach an ESD-preventive wrist strap to your wrist and to the ESD ground connector or a bare metal surface on your chassis.
- Step 2** Remove the SFP transceiver from its protective packaging.
-  **Note** Do not remove the optical bore dust plugs until directed to do so later in the procedure.
- Step 3** Check the label on the SFP transceiver body to verify that you have the correct model for your network.
- Step 4** Find the send (TX) and receive (RX) markings that identify the top side of the SFP transceiver.
-  **Note** On some SFP transceivers, the TX and RX marking might be replaced by arrowheads pointing from the SFP transceiver connector (transmit direction or TX) and toward the connector (receive direction or RX).
- Step 5** Position the SFP transceiver in front of the socket opening.
-  **Note** Different Cisco devices have different SFP socket configurations. Your Cisco device could have either a latch-up or a latch-down orientation. Ensure that you are installing the SFP transceiver in the correct orientation for your Cisco device.
- Step 6** Holding it as shown in [Figure 3-10](#), insert the SFP into the socket until you feel the connector latch into place.

**Figure 3-10 Inserting an SFP Transceiver into a Socket**



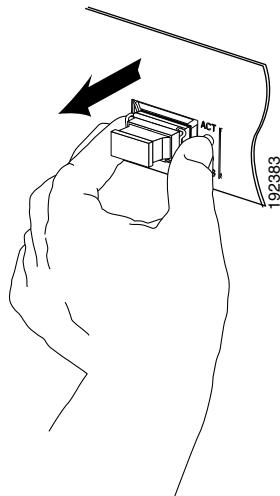
**Step 7** Press the SFP transceiver into the slot firmly with your thumb as shown in [Figure 3-11](#).

**Figure 3-11 Latching the SFP Transceiver**



**Step 8** To verify that the SFP transceiver is seated and latched properly:

- a. Grasp the SFP transceiver as shown in [Figure 3-12](#) and try to remove it without releasing the latch.
- b. If the SFP transceiver cannot be removed, it is installed and seated properly. If the SFP transceiver can be removed, reinsert it and press harder with your thumb, repeating if necessary until it is latched securely into the socket.

**Figure 3-12** Verifying the SFP Transceiver Installation

**Note** For an optical SFP transceiver, before removing the dust plugs and making any optical connections, observe the following guidelines:

- Always keep the protective dust plugs on the unplugged fiber-optic cable connectors and the transceiver optical bores until you are ready to make a connection.
- Always inspect and clean the LC connector end-faces just before making any connections. See the Tip on this page for a pointer to a fiber-optic inspection and cleaning white paper.
- Always grasp the LC connector housing to plug or unplug a fiber-optic cable.

---

**Step 9** Remove the dust plugs from the network interface cable LC connectors. Save the dust plugs for future use.

**Step 10** Inspect and clean the LC connector's fiber-optic end-faces.



**Tip** For complete information on inspecting and cleaning fiber-optic connections, see the white-paper document at this URL:

[http://www.cisco.com/en/US/tech/tk482/tk876/technologies\\_white\\_paper09186a0080254eba.shtml](http://www.cisco.com/en/US/tech/tk482/tk876/technologies_white_paper09186a0080254eba.shtml)

---

**Step 11** Remove the dust plugs from the SFP transceiver optical bores.

**Step 12** Immediately attach the network interface cable LC connector to the SFP transceiver.

## ■ Attaching the Interface Cables

**Step 13** To connect 1000BASE-T SFP transceivers to a copper network, follow these substeps:



**Caution**

To comply with GR-1089 intrabuilding lightning immunity requirements, you must use grounded, shielded, twisted-pair Category 5 cabling.

- a. Insert the Category 5 network cable RJ-45 connector into the SFP transceiver RJ-45 connector.



**Note**

When connecting to a 1000BASE-T-compatible server, workstation, or router, use four twisted-pair, straight-through Category 5 cabling for the SFP transceiver port. When connecting to a 1000BASE-T-compatible switch or repeater, use four twisted-pair, crossover Category 5 cabling.

- b. Insert the other end of the network cable into an RJ-45 connector on a 1000BASE-T-compatible target device.

## Connecting to the Ethernet Management Port

Both chassis provide a Ethernet Management port that can be used to manage the switch through an Ethernet network. This port can also be used to download software to the switch or transfer files to remote servers for analysis or backup storage.

The typical connection to the Management Ethernet port uses an Ethernet cable with RJ-45 connectors at each end. The other end of the cable typically connects to an Ethernet switch, hub, or router that provides connectivity between the multishelf system and networks from which system management is desired.

To attach a cable to the Ethernet management port, follow these steps:

**Step 1** Connect the RJ-45 plug at one end of the network cable to the target device port.

**Step 2** Connect the RJ-45 plug at the other end of the network cable to a Ethernet Management port on the Catalyst 4948E chassis.

## Connecting to the Console Port

You must use the console port to perform the initial configuration. To connect the switch console port to a PC, use an RJ-45-to-DB-9 adapter cable (optional).

To connect the PC or terminal to the Catalyst 4948E switch console port, follow these steps:

**Step 1** Using an RJ-45-to-DB-9 adapter cable, insert the RJ-45 connector into the console port that is located on the front of the switch.

**Step 2** Attach the DB-9 female DTE of the adapter cable to a PC serial port, or attach an appropriate adapter to the terminal.

# Powering Up the Switch

This section provides a quick power-up procedure for a switch. The section is divided into the following topics:

- [Starting the Terminal-Emulation Software, page 3-21](#)
- [Powering Up the Switch, page 3-21](#)

## Starting the Terminal-Emulation Software

Before you power-up the switch, start the terminal-emulation session so that you can see the output display from the power-on self-test (POST).

The terminal-emulation software, which is frequently a PC application such as Hyperterminal or ProcommPlus, makes communication between the switch and your PC or terminal possible.

To start the terminal-emulation software, follow these steps:

- 
- Step 1** Start the terminal-emulation program if you are using a PC or terminal.
- Step 2** Start a terminal-emulation session.
- Step 3** Configure the baud rate and character format of the PC or terminal to match these console port default characteristics:
- 9600 baud
  - 8 data bits
  - 1 stop bit
  - No parity
  - None (flow control)
- 

## Powering Up the Switch

If your chassis has AC-input power supplies installed, follow these steps to power up the chassis:

- 
- Step 1** Switch the power supply power switches to the ON position.
- Step 2** Verify power supplies are operating correctly by looking at the INPUT OK and the OUTPUT OK LEDs located on the power supply faceplate. The LEDs should be green when the power supply and the power supply fan are functioning normally.

Also verify that the front panel PS1 LED is lit green. If the chassis is equipped with a second (redundant) power supply, verify that the front panel PS2 LED is also lit green. If the LEDs are not green, refer to the “[300 W AC-Input Power Supply \(PWR-C49E-300AC-R\)](#)” section on page [A-1](#) or “[300 W AC-Input Power Supply \(PWR-C49E-300AC-F\)](#)” section on page [A-5](#) for additional LED descriptions.

---

If your chassis has DC-input power supplies installed, follow these steps to power up the chassis:

---

**Step 1** Verify that the terminal block cover is installed on the power supply correctly and that no bare wires are exposed.

**Step 2** Remove any safety flag and lockout devices or any tape from the source DC circuit breaker switch handle, and restore source DC power by moving the circuit breaker switch handle to the on (l) position.



**Note** The DC-input power supply does not have an on/off switch. Restoring source DC power will energize the Catalyst 4948E DC-input power supply and power up the chassis.

---

**Step 3** Verify power supplies are operating correctly by looking at the INPUT OK and the OUTPUT OK LEDs located on the power supply faceplate. The LEDs should be green when the power supply and the power supply fan are functioning normally.

**Step 4** Also verify that the front panel PS1 LED is lit green. If the chassis is equipped with a second (redundant) power supply, verify that the front panel PS2 LED is also lit green. If the LEDs are not green, refer to the “[300 W DC-Input Power Supply \(PWR-C49-300DC\)](#)” section on page A-12 for LED descriptions.

---

As the switch powers on, it begins the POST, which are a series of tests that run automatically to ensure that the switch functions properly. The POST lasts approximately 1 minute. After the POST is complete, the SYSTEM LED should be green. If the switch fails the POST, the SYSTEM LED turns amber.

The port status LEDs on the switch also cycle through several colors during power up.

- The LED turns amber while the STP feature discovers the network topology and searches for loops. This process takes about 30 seconds, and then the LED turns green.
- The LED turns green when the chassis port and the target device have an established link.
- If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be a problem with the target device.



**Note** The POST failures are usually fatal. Call Cisco Systems if your switch does not pass the POST.

---

For information on configuring the Catalyst 4948E or the Catalyst 4948E-F switch, refer to the appropriate software configuration guide at:

[http://www.cisco.com/en/US/products/ps6021/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6021/products_installation_and_configuration_guides_list.html)