



Installing the Cisco MDS 9148S Switch

This chapter describes how to install the MDS 9148S switch and its components, and it includes the following information:

- [Preinstallation, page 2-16](#)
- [Front-Facing Installation, page 2-19](#)
- [Installing the Switch in a Cabinet with Insufficient Front Clearance, page 2-21](#)
- [Grounding the Switch, page 2-26](#)
- [Grounding the Switch, page 2-26](#)
- [Starting Up the Switch, page 2-27](#)
- [Removing and Installing Components, page 2-29](#)



Note

Before you install, operate, or service the system, read the *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family* for important safety information.



Warning

IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.
Statement 1071

SAVE THESE INSTRUCTIONS



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

**Note**

Each new switch requires a license; see the *Cisco MDS 9000 Family NX-OS Licensing Guide* for instructions on installing a license.

Preinstallation

This section includes the following information:

- [Installation Options](#), page 2-16
- [Installation Guidelines](#), page 2-16
- [Required Equipment](#), page 2-18
- [Unpacking and Inspecting the Switch](#), page 2-18

Installation Options

The MDS 9148S Switch can be installed using the following methods:

- In an open EIA rack, using:
 - The rack-mount kit shipped with the switch
 - The Telco and EIA Shelf Bracket Kit (an optional kit, purchased separately) in addition to the rack-mount kit shipped with the switch
- In a perforated or solid-walled EIA cabinet, using:
 - The rack-mount kit shipped with the switch
 - The Telco and EIA Shelf Bracket Kit (an optional kit, purchased separately) in addition to the rack-mount kit shipped with the switch
- In a two-post Telco rack, using:
 - The Telco and EIA Shelf Bracket Kit (an optional kit, purchased separately) in addition to the front brackets shipped with the switch

For instructions on installing the switch using the rack-mount kit shipped with the switch, see the [“Front-Facing Installation”](#) section on page 2-19.

For instructions on installing the switch using the optional, separately purchased Telco and EIA Shelf Bracket Kit, see the [“Cisco MDS 9000 Family Telco and EIA Shelf Bracket”](#) section on page 1-45.

**Note**

The Telco and EIA Shelf Bracket Kit is optional and is not provided with the switch. To order the kit, contact your switch provider.

Installation Guidelines

Follow these guidelines when installing the Cisco MDS 9148S Switch:

- Plan your site configuration and prepare the site before installing the switch. The recommended site planning tasks are listed in [Appendix 1, “Site Planning and Maintenance Records.”](#)

- Ensure there is adequate space around the switch to allow for servicing the switch and for adequate airflow (airflow requirements are listed in [Appendix 1, “Technical Specifications”](#)).
- Ensure the air-conditioning meets the heat dissipation requirements listed in [Appendix 1, “Technical Specifications.”](#)
- Ensure the cabinet or rack meets the requirements listed in [Appendix 1, “Cabinet and Rack Installation.”](#)



Note If the front cabinet mounting rails are not offset from the front door or bezel panel by a minimum of 3 inch (7.6 cm), and a minimum of 5 inch. (12.7 cm) if cable management brackets are installed on the front of the chassis, the chassis should be mounted rear-facing to ensure the minimum bend radius for fiber-optic cables. See the [“Installing the Switch in a Cabinet with Insufficient Front Clearance”](#) section on page 2-21.



Note Jumper power cords are available for use in a cabinet. For more information, see the [“Jumper Power Cord”](#) section on page 1-69.

- Ensure the chassis is adequately grounded. If the switch is not mounted in a grounded rack, we recommend connecting both the system ground on the chassis and the power supply ground to an earth ground.
- Ensure the site power meets the power requirements listed in [Appendix 1, “Technical Specifications.”](#) If available, you can use an uninterruptible power supply (UPS) to protect against power failures.



Caution Avoid UPS types that use ferro-resonant technology. These UPS types can become unstable with systems such as the Cisco MDS 9000 Family, which can have substantial current draw fluctuations because of fluctuating data traffic patterns.

- Ensure that circuits are sized according to local and national codes.

For North America, the 300-W power supplies require a 20-A circuit. If you are using a 200- or 240-VAC power source in North America, the circuit must be protected by a two-pole circuit breaker.



Caution To prevent loss of input power, ensure the total maximum loads on the circuits supplying power to the switch are within current ratings for wiring and breakers.

- As you install and configure the switch, record the information listed in the [“Site Planning and Maintenance Records”](#) section on page 1-71.
- Use the following screw torques when installing the switch:
 - Captive screws: 4 in-lb
 - M3 screws: 4 in-lb
 - M4 screws: 12 in-lb
 - 10-32 screws: 20 in-lb
 - 12-24 screws: 30 in-lb

Required Equipment

Gather the following tools before beginning the installation:

- Number 1 Phillips screwdriver with torque capability
- 3/16-in. flat-blade screwdriver
- Tape measure and level
- ESD wrist strap or other grounding device
- Antistatic mat or antistatic foam

The following additional items (not found in the accessory kit) are required to ground the chassis:

- Grounding cable (6 AWG recommended), sized according to local and national installation requirements; the required length depends on the proximity of the switch to proper grounding facilities
- Crimping tool large enough to accommodate girth of lug
- Wire-stripping tool

Unpacking and Inspecting the Switch

**Caution**

When handling switch components, wear an ESD strap and handle modules by the carrier edges only. An ESD socket is provided on the chassis. For the ESD socket to be effective, the chassis must be grounded through the power cable, the chassis ground, or the metal-to-metal contact with a grounded rack.

**Tip**

Keep the shipping container in case the chassis requires shipping in the future.

**Note**

If you purchased Cisco support through a Cisco reseller, contact the reseller directly. If you purchased support directly from Cisco, contact Cisco Technical Support at this URL:
http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

**Note**

The switch is thoroughly inspected before shipment. If any damage occurred during transportation or any items are missing, contact your customer representative immediately.

To inspect the shipment, follow these steps:

Step 1

Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all items, including the following:

- Grounding lug kit
- Rack-mount kit
- ESD wrist strap
- Cables and connectors

- Any optional items ordered
- Step 2** Check for damage and report any discrepancies or damage to your customer service representative. Have the following information ready:
- Invoice number of shipper (see packing slip)
 - Model and serial number of the damaged unit
 - Description of damage
 - Effect of damage on the installation
-

Front-Facing Installation

To install the switch in a cabinet or rack using the rack-mount kit provided with the switch, follow these steps:

- Step 1** Install the front rack-mount bracket as follows:
- a. Position one of the front rack-mount brackets against the side of the switch and align the screw holes. Then attach the bracket to the switch with the three M4 screws originally provided with the bracket.
 - b. Repeat with the other front rack-mount bracket on the other side of the switch.

- Step 2** Install the C brackets as follows:

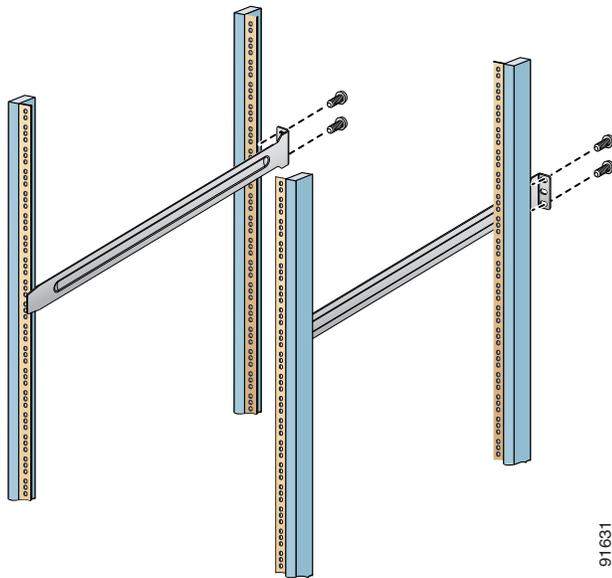


Note Two C brackets are shipped preinstalled on the switch, using three M3 screws per bracket. This installation step is only necessary if the C brackets were removed.

- a. Position one of the C brackets against the side of the switch and align the screw holes. Attach the bracket to the switch with the three M3 screws originally provided with the bracket.
 - b. Repeat with the other C bracket on the other side of the switch.
- Step 3** Install the slider rails in the rack. Position one of the slider rails against the rack mounting rails and align the screw holes as shown in [Figure 2-1](#).
- Step 4** Attach the slider rail using two 12-24 screws or two 10-32 screws, depending on the rack rail thread type. For racks with square holes, insert the 12-24 cage nuts in position behind the mounting holes in the slider rails.
- a. Repeat with the other slider rail on the other side of the rack.

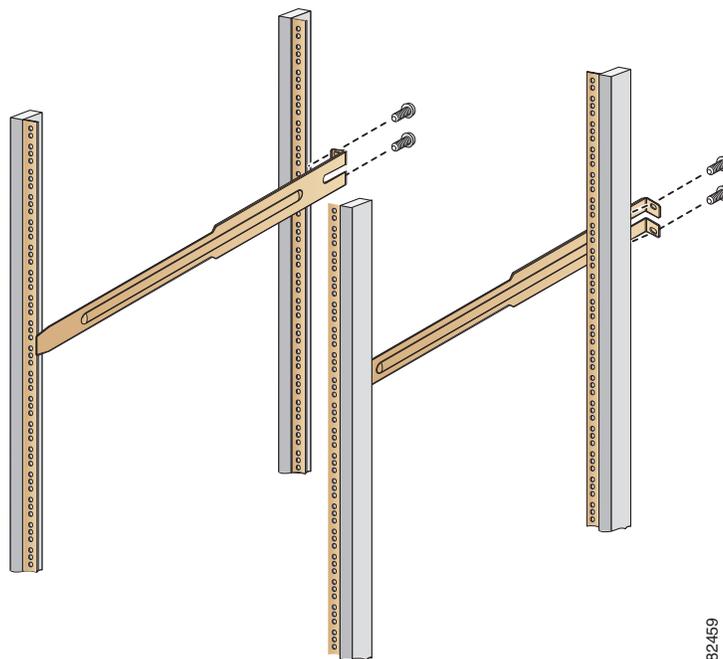
- b. Use the tape measure and level to verify that the rails are horizontal and at the same height.

Figure 2-1 *Installing the Slider Rails*



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Figure 2-2 *Installing the Notched Slider Rails*

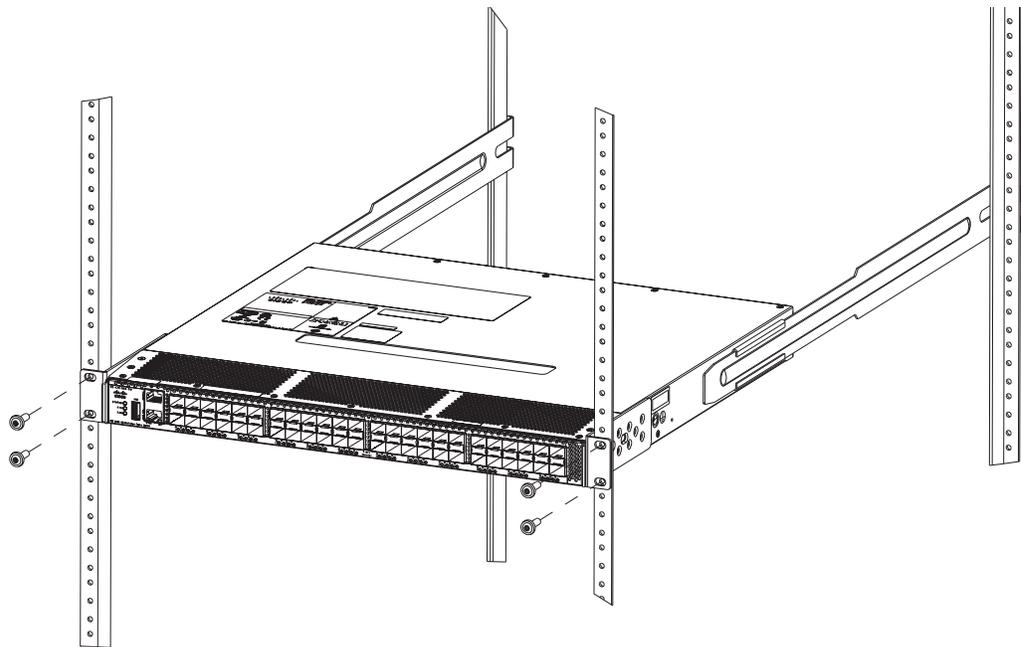


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- Step 5** Insert the switch into the rack:
- By using both hands, position the switch with the back of the switch between the front rack-mounting rails as shown in [Figure 2-3](#).
 - Align the two C brackets on either side of the switch with the slider rails installed in the rack. Slide the C brackets onto the slider rails, and then gently slide the switch all the way into the rack. If the switch does not slide easily, try realigning the C brackets on the slider rails.
- Step 6** Stabilize the switch in the rack by attaching the front rack-mount brackets to the front rack-mounting rails:
- Insert two screws (12-24 or 10-32, depending on rack type) and through the cage nuts and the holes in one of the front rack-mount brackets and into the threaded holes in the rack-mounting rail.
 - Repeat for the front rack-mount bracket on the other side of the switch.

If you are installing the optional cable guides, place the cable guides in front of the front rack-mount brackets, and then pass the screws through the cable guides, front rack-mount brackets, and mounting rail. You can install one or both cable guides; if installing a single cable guide, it can be installed on either side.

Figure 2-3 Attaching the Switch to the Rack



Installing the Switch in a Cabinet with Insufficient Front Clearance

This section describes how to use the rack-mount kit provided with the switch to install the Cisco MDS 9148S switch into a cabinet with insufficient front-facing clearance. The Cisco MDS 9148S switch is installed rear-facing to provide adequate clearance for the fiber-optic cables. This cabinet meets the requirements described in [Appendix 1, “Cabinet and Rack Installation,”](#) except the cabinet has less than three-inch clearance between the inside of the front door or bezel panel and the front cabinet mounting rails. This rear-facing installation is necessary to ensure that the minimum bend radius for the fiber-optic

cables is maintained. In these cabinets, the Cisco MDS 9148S switch is mounted backwards, with the fiber-optic cables facing toward the rear of the cabinet and the power supplies facing the front of the cabinet.

**Caution**

If the rack is on wheels, ensure that the brakes are engaged or that the rack is otherwise stabilized.

The rack-mount kit provided with the switch contains the items listed in [Table 2-1](#).

Table 2-1 **Table 2-1 Cisco MDS 9148S Fabric Switch Rack-Mount Kit**

Description	Quantity
30- to 36-inch slider rails	2 per kit
24- to 30-inch slider rails	2 per kit
18- to 24-inch slider rails	2 per kit
Front rack-mount brackets	2 per kit
12-24 x 3/4-inch Phillips binder-head screws	10 per kit
10-32 x 3/4-inch Phillips binder-head screws	10 per kit
M4 x 6-mm Phillips flat-head screws	6 per kit
12-24 cage nuts	10 per kit

Installing Front Rack-Mount Brackets for Cabinets with 26 Inches or Greater of Rail Spacings

The front rack-mount brackets for the Cisco MDS 9148S switch must be installed onto the switch prior to installing the switch into the cabinet. Follow these steps for cabinets with front-mounting rail to rear-mounting rail spacings greater or equal to 26 inches:

- Step 1** Install the front rack-mount brackets as follows:
- Position one of the front rack-mount brackets against the side of the switch and align the screw holes as shown in [Figure 2-4](#). Then attach the bracket to the switch with the three M4 screws originally provided with the bracket.
 - Repeat with the other front-rack mount bracket on the other side of the switch.

- Step 2** Install the C brackets as follows:



Note Two C brackets are shipped preinstalled on the switch, using three M3 screws per bracket. This installation step is only necessary if the C brackets were removed.

- Position one of the C brackets against the side of the switch and align the screw holes. Attach the bracket to the switch with the three M3 screws originally provided with the bracket.
- Repeat with the other C bracket on the other side of the switch.

Installing Front Rack-Mount Brackets for Cabinets with Less Than 26 Inches of Rail Spacings

The front rack-mount brackets for the Cisco MDS 9148S switch must be installed onto the switch prior to installing the switch into the cabinet. To install brackets for cabinets with front-mounting rail to rear-mounting rail spacings less than 26 inches that need to be mounted backwards to maintain adequate fiber-optic clearances, follow these steps:

- Step 1** Install the front-rack mount brackets for cabinets with rail-to-rail spacings less than 26 inches as follows:
- Position one of the front rack-mount brackets against the side of the switch and align the screw holes. Then attach the bracket to the switch with two of the three M4 screws originally provided with the bracket.
 - Repeat with the other front rack-mount bracket on the other side of the switch.



Note The front rack-mount bracket does not align with all three holes in the Cisco MDS 9148S switch in this configuration. The two screws are adequate to hold the weight of the Cisco MDS 9148S switch.

Step 2 Install the C brackets as follows:



Note

Two C brackets are shipped preinstalled on the switch, using three M3 screws per bracket. This installation step is only necessary if the C brackets were removed.

- a. Position one of the C brackets against the side of the switch and align the screw holes. Then attach the bracket to the switch with the three M3 screws originally provided with the bracket.
- b. Repeat with the other C bracket on the other side of the switch.

Installing Cisco MDS 9148S Switch Rear-Facing into Cabinet

To install a Cisco MDS 9148S switch rear-facing into a cabinet using the rack-mount kit provided with the switch (for cabinets with insufficient front-facing clearance), follow these steps:

Step 1 Install the notched slider rails in the rack:

- a. Route the power cord through the open cutout at the end of one of the slider rails, and then let the cord dangle while you proceed with the next steps.
- b. Position one of the slider rails against the front rack-mounting rails and align the screw holes. Attach them using two 12-24 screws or two 10-32 screws, depending on the rack rail thread type. For racks with square holes, first install the 12-24 cage nuts.
- c. Repeat with the other slider rail on the other front side of the rack.
- d. Use the tape measure and level to verify that the rails are horizontal and at the same height.

Step 2 Insert the switch into the rack:

- a. Using both hands, position the switch with the back of the switch between the rear rack-mounting rails.
- b. Align the two C brackets on either side of the switch with the slider rails installed in the rack. Slide the C brackets onto the slider rails and then gently slide the switch all the way into the rack. If the switch does not slide easily, try realigning the C brackets on the slider rails.

Step 3 Connect the power cord that you previously routed through the open cutout of the slider rail to the switch. Limit the length of the power cord between the back of the chassis and the rail opening.

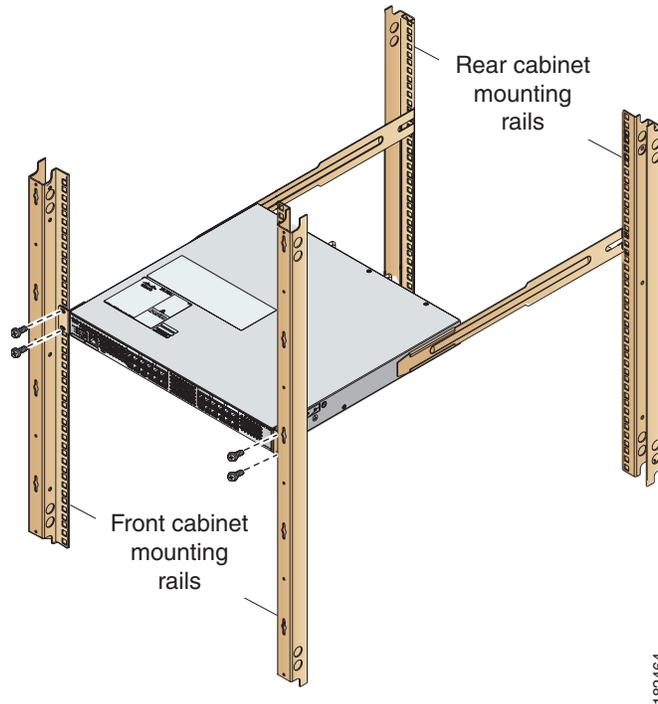


Note

If you failed to route the power cord through the open cutout of the slider rail as directed in Step 1, remove the switch and rails and remount the rails using the correct method. Do not connect the power cord by routing it over the top of the slider rail. This type of installation is hazardous.

- Step 4** Stabilize the switch in the rack by attaching the front rack-mount brackets to the rear rack-mounting rails:
- a. Insert two screws (12-24 or 10-32, depending on rack type) through the holes in one of the front rack-mount brackets and into the threaded holes in the back rack-mounting rail (see [Figure 2-4](#)). For racks with square holes, first install the 12-24 cage nuts.

Figure 2-4 Attaching the Cisco MDS 9148S Switch (Rear-Facing) to the Cabinet



- b. Repeat for the front rack-mount bracket on the other side of the switch.



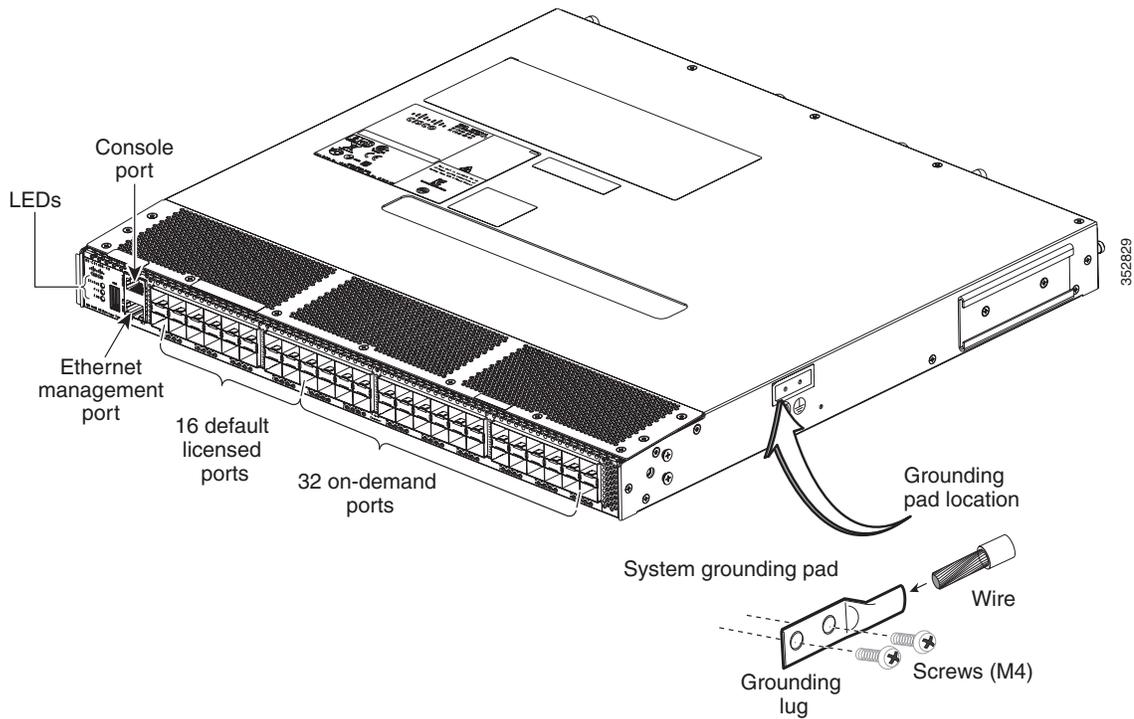
Tip

If the chassis exceeds the 1-RU space on the low side of the rack, you may have difficulty installing other equipment. In this situation, loosen the screws on the front and back rails of the chassis and raise it to the top of the RU space by pushing the chassis up until it cannot go any further. Then retighten the screws while keeping the chassis in the elevated position.

Grounding the Switch

A grounding pad with two threaded M4 holes is provided on the chassis for attaching a grounding lug. [Figure 2-5](#) shows the system ground location on the Cisco MDS 9148S switch.

Figure 2-5 Location of Switch Ground on the Cisco MDS 9148S Switch



Warning

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

Caution

We recommend grounding the chassis, even if the rack is already grounded.

Note

If the rack is less than 25-in. (635 mm) deep, the slider rails will cover the grounding hole. Therefore, the rack must either be grounded or at least 25-in. (635 mm) deep.

Caution

All power supplies must be grounded. The receptacles of the AC power cables used to provide power to the chassis must be the grounding type, and the grounding conductors should connect to protective earth ground at the service equipment.

**Note**

The grounding lug must be NRTL listed and compatible with copper conductors. Only copper conductors (wires) must be used and the copper conductor must comply with National Electrical Code (NEC) for ampacity.

**Note**

Customers who require compliance to GR-1089-CORE bonding and grounding requirements, must use the ground conductor.

To attach the grounding lug and cable to the chassis, follow these steps:

- Step 1** Use a wire-stripping tool to remove approximately 0.75 in. (19 mm) of the covering from the end of the grounding cable.
- Step 2** Insert the stripped end of grounding cable into the open end of the grounding lug.
- Step 3** Use the crimping tool to secure the grounding cable in the grounding lug.
- Step 4** Remove the adhesive label from the grounding pad on the chassis.
- Step 5** Place the grounding lug against the grounding pad so that there is solid metal-to-metal contact, and insert the two M4 screws with washers through the holes in the grounding lug and into the grounding pad.
- Step 6** Ensure that the lug and cable do not interfere with other equipment.
- Step 7** Prepare the other end of the grounding cable and connect it to an appropriate grounding point in your site to ensure adequate earth ground.

Starting Up the Switch

This section provides instructions for powering up the switch and verifying component installation.

**Caution**

During this procedure, wear grounding wrist straps to avoid ESD damage to the switch.

**Note**

Do not connect the MGMT 10/100/1000 Ethernet port to the LAN until the initial switch configuration has been performed. For instructions on connecting to this port, see the [“Connecting the Console Port” section on page 1-35](#).

To power up the switch and verify hardware operation, follow these steps:

- Step 1** Verify that both power supplies and fan modules are installed and tighten any loose captive screws.
- Step 2** Verify that the power switches on both power supplies are off. Then plug the power cables into the power supplies and arrange the cables so that they cannot be accidentally pulled out.



Note Depending on the outlet receptacle on your power distribution unit, you may need the optional jumper power cord to connect the Cisco MDS 9148S switch to your outlet receptacle. See the “[Jumper Power Cord](#)” section on page 1-69.

- Step 3** Connect the other end of the power cables to an AC power source.
- Step 4** Ensure that the switch is adequately grounded as described in the “[Installing the Switch in a Cabinet with Insufficient Front Clearance](#)” section on page 2-21, and that the power cables are connected to outlets that have the required AC power voltages (provided in the “[Installing the Switch in a Cabinet with Insufficient Front Clearance](#)” section on page 2-21).
- Step 5** Flip the power switches on the power supplies to the on (I) position. The switch boots automatically.
- Step 6** Listen for the fans; they should begin operating as soon as the switch is powered on.



Caution Do not operate the switch without a functioning fan module except for during the brief fan module replacement procedure. The Cisco MDS 9000 Family switches can operate for only a few minutes without any functioning fan modules before they begin to overheat.

- Step 7** Verify that the LED behavior is as follows when the switch has finished booting:
- Fan status LED is green.
 - Each power supply LED is green.
 - The Switch status LED is green. If this LED is orange or red, then one or more environmental monitors is reporting a problem.
 - The Ethernet port Link LEDs should not be on unless the cable is connected.



Note The LEDs for the Fibre Channel ports remain orange until the ports are enabled, and the LED for the MGMT 10/100/1000 Ethernet port remains off until the port is connected.

If any LEDs other than the Fibre Channel port LEDs are orange or red after the initial boot processes are complete, see the *Cisco MDS 9000 Family Troubleshooting Guide*.

- Step 8** Try removing and reinstalling a component that is not operating properly. If it still does not operate correctly, contact your customer service representative for a replacement.



Note If you purchased Cisco support through a Cisco reseller, contact the reseller directly. If you purchased support directly from Cisco, contact Cisco Technical Support at this URL: http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

- Step 9** Verify that the system software has booted and the switch has initialized without error messages. If any problems occur, see the *Cisco MDS 9000 Family Troubleshooting Guide* or the *Cisco MDS 9000 Family System Messages Guide*. If you cannot resolve an issue, contact your customer service representative.
- Step 10** Complete the worksheets provided in [Appendix 1, “Site Planning and Maintenance Records”](#) for future reference.

**Note**

A setup utility automatically launches the first time you access the switch and guides you through the basic configuration. For instructions about how to configure the switch and check module connectivity, see the *Cisco Fabric Manager Fundamentals Configuration Guide*.

Removing and Installing Components

The Cisco MDS 9148S switch is shipped with two field-replaceable power supplies. Each power supply includes a fixed fan. The Cisco MDS 9148S switch has two field-replaceable fan modules.

This section provides the following information:

- [Removing and Installing AC Power Supplies, page 2-30](#)
- [Removing and Installing Fan Modules, page 2-31](#)

**Warning**

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

**Caution**

During this procedure, wear grounding wrist straps to avoid ESD damage to the switch.

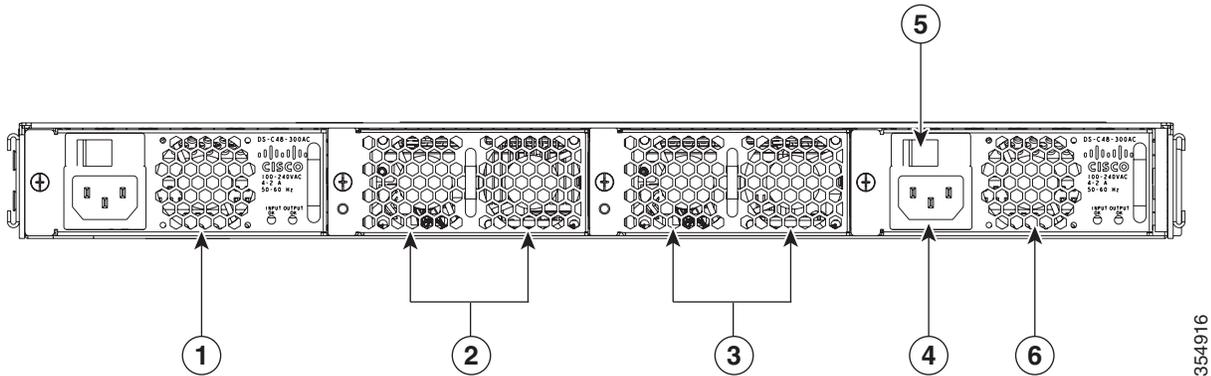
**Note**

The Cisco MDS 9148S Switch is only supported for operation with both power supplies and both fan modules installed, and with all fans working.

With two power supplies installed, if one power supply fails, the system can continue to function normally on a single healthy power supply. However, the failed power supply should be replaced as soon as possible to provide redundancy.

The fan modules are required to ensure proper cooling of the switches.

Figure 2-6 Rear View of the Cisco MDS 9148S Switch



1	Power Supply 2	4	AC Power receptacle
2	Fan Module 2 (Fans 2 and 4)	5	Switch On/Off
3	Fan Module 1 (Fans 1 and 3)	6	Power Supply 1

Removing and Installing AC Power Supplies

This section provides instructions for removing and installing the AC power supplies for the Cisco MDS 9148S switch.

Removing Power Supplies

To remove a AC power supply, follow these steps:

-
- Step 1** Turn the power switch to the off (0) position on the power supply that you are removing.
 - Step 2** Disconnect the power cord from the power source.
 - Step 3** Loosen the captive screw.
 - Step 4** Grasp the power supply handle and slide the power supply out of the switch.
-

Installing Power Supplies

To install the dual 300-W AC-input power supplies, follow these steps:

-
- Step 1** Ensure that the system (earth) ground connection has been made.
-

- Step 2** Make sure the power cord is disconnected before installing the power supply.
- Step 3** Verify that the power switch is in the off (O) position on the power supply that you are installing.
- Step 4** Slide the power supply into the power supply bay. Make sure that the power supply is fully seated in the bay.
- Step 5** Tighten the power supply captive screw.
- Step 6** Plug the power cord into the power supply.
- Step 7** Connect the other end of the power cord to an AC-input power source.



Note Depending on the outlet receptacle on your power distribution unit, you may need the optional jumper power cord to connect the Cisco MDS 9148S switch to your outlet receptacle. See the [“Jumper Power Cord”](#) section on page 1-69.

- Step 8** Turn the power switch to the on (I) position on the power supply.
- Step 9** Verify power supply operation by checking that the power supply (P/S) LED in the front panel is green. If the LED is not green, see the *Cisco MDS 9000 Family Troubleshooting Guide*.

Removing and Installing Fan Modules

This section provides instructions for removing and installing the fan modules for the Cisco MDS 9148S switch.

Removing a Fan Module on the Cisco MDS 9148S Switch

The fan module is designed to be removed and replaced while the system is operating without presenting an electrical hazard or damaging the system.



Caution

The Cisco MDS 9000 Family has internal temperature sensors that can shut down the system if the temperature at different points within the chassis exceed certain safety thresholds. To be effective, the temperature sensors require the presence of airflow; therefore, in the event a fan module is removed from the chassis, the Cisco MDS 9000 Family will be shut down after five minutes to prevent potentially undetectable overheating. However, the switches will shut down sooner if the higher-level temperature threshold is exceeded.



Warning

When removing the fan tray, keep your hands and fingers away from the spinning fan blades. Let the fan blades completely stop before you remove the fan tray. Statement 258

To remove the existing fan module, follow these steps:

- Step 1** Locate the fan module in the back of the switch.
- Step 2** Slide the seating tabs toward the center of the fan module.
- Step 3** Grasp the fan module handle and pull it outward.

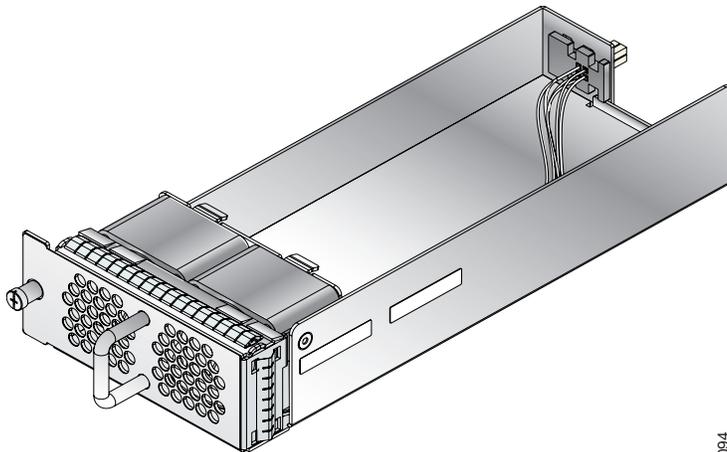
- Step 4** Pull the fan module out of the switch and put it in a safe place.
-

Installing a Fan Module

To install a new fan module, follow these steps:

- Step 1** Position the fan module with the LED oriented away from the back of the switch. [Figure 2-7](#) shows the fan module for the Cisco MDS 9148S switch.
- Step 2** Slide the fan module into the switch until it clicks into place. [Figure 2-7](#) shows the Cisco MDS 9148S fan module.

Figure 2-7 Cisco MDS 9148S Fan Module



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Verifying the Fan Module

To verify that the new fan module is installed correctly, follow these steps:

-
- Step 1** Listen for the fans; you should immediately hear them operating. If you do not hear them, ensure that the fan module is inserted completely in the switch and the faceplate is flush with the switch back panel.
 - Step 2** Verify that the fan module LED is green. If the LED is orange, then one fan has failed in this fan module; if the LED is red, then both fans have failed in this fan module.
 - Step 3** Contact your customer service representative for assistance if, after several attempts, the fans do not operate or you experience trouble with the installation.



Note Verify that the transceiver and cable type both have LC connectors and are the required type for longwave or shortwave transmission and the required distances. The transceiver label generally lists the model and wavelength.



Note If you purchased this product through a Cisco reseller, contact the reseller directly for technical support. If you purchased this product directly from Cisco, contact Cisco Technical Support at this URL: http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html
