



Installing the Chassis

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Safety

Before you install, operate, or service the switch, see the *Regulatory, Compliance, and Safety Information for the Cisco Nexus 3000 and 9000 Series* for important Safety Information.



Warning **Statement 1071**—Warning Definition

IMPORTANT SAFETY INSTRUCTIONS

Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Read the installation instructions before using, installing, or connecting the system to the power source. Use the statement number provided at the end of each warning statement to locate its translation in the translated safety warnings for this device.

SAVE THESE INSTRUCTIONS



Warning **Statement 1017**—Restricted Area

This unit is intended for installation in restricted access areas. Only skilled, instructed, or qualified personnel can access a restricted access area.



Warning **Statement 1030**—Equipment Installation

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

Preparing to Install the Chassis

Before you can install the switch, you must verify the following:

- The installation site meets the following requirements as stated in Chapter 2:
 - Environmental requirements for temperature, humidity, altitude, and air particulates.
 - Cabinet or rack is installed and meets the requirements for the switch.



Note Jumper power cords are available for use in a cabinet.

- The rack is positioned so that you can install the switch with its cold air intakes positioned in a cold aisle.

If the fan and power supply modules are burgundy or red colored, you must install the chassis with its port side in a cold aisle. If the modules are blue colored, you must be able to install the chassis with the fan modules in a cold aisle.

- Earth ground connection is close to the switch. You must be able to easily connect the switch directly to an earth ground or indirectly through a grounded rack.



Warning High leakage current. Earth connection essential before connecting to power supply.

- Site power meets the switch requirements. If you are using n+n redundancy, you must have two power sources within reach of the switch when it is installed in the cabinet or rack.

If available, you can use an uninterruptible power supply (UPS) to protect against power failures.



Caution Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with systems such as the Cisco Nexus switches. These switches 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 power supply requires a 15-A or 20-A circuit.



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

- There is adequate clearance around the rack to install the switch and to allow for unimpeded airflow.

- You have the following equipment in addition to the switch and the kits shipped with the switch:

- Eight customer-supplied 12-24 or 10-32 screws (required for attaching slider rails and mounting bracket to the mounting rails)
- Number 1 and number 2 Phillips screwdrivers with torque capability
- 3/16-inch flat-blade screwdriver
- Tape measure and level
- ESD wrist strap or other grounding device (wrist strap can be found in the accessory kit)
- Antistatic surface large enough to place the switch
- 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 the girth of the grounding lug
- Wire stripping tool

Unpacking and Inspecting the Chassis

**Caution**

When handling switch components, such as fan or power supply modules, wear a grounded ESD strap and handle the modules by their carrier edges only. To ground the ESD strap, make sure that it is attached to an earth ground, a grounded chassis, or a grounded rack.

**Tip**

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

**Note**

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

To inspect the switch, 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.
- 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 the packing slip)
 - Model and serial number of the damaged unit
 - Description of damage

- Effect of damage on the installation
- Photos of the damaged shipping containers and damaged product

Step 3 For dual direction airflow switches, check to be sure that all of the fan and power supply modules have the same airflow direction.

- Port-side intake airflow direction indicated with burgundy coloring
- Port-side exhaust airflow direction indicated with blue coloring

Installing a 1(RU) Rack in a Four-Post Rack

Installing the Switch Using the NXK-ACC-KIT-1RU Rack-Mount Kit

To install the switch, you must attach front and rear mounting brackets to the switch. Then install slider rails on the rear of the rack and slide the switch onto the slider rails. Secure the switch to the front of the rack. Typically, the front of the rack is the side easiest to access for maintenance.



Note You supply the eight 10-32 or 12-24 screws to mount the slider rails and switch to the rack.

Before you begin

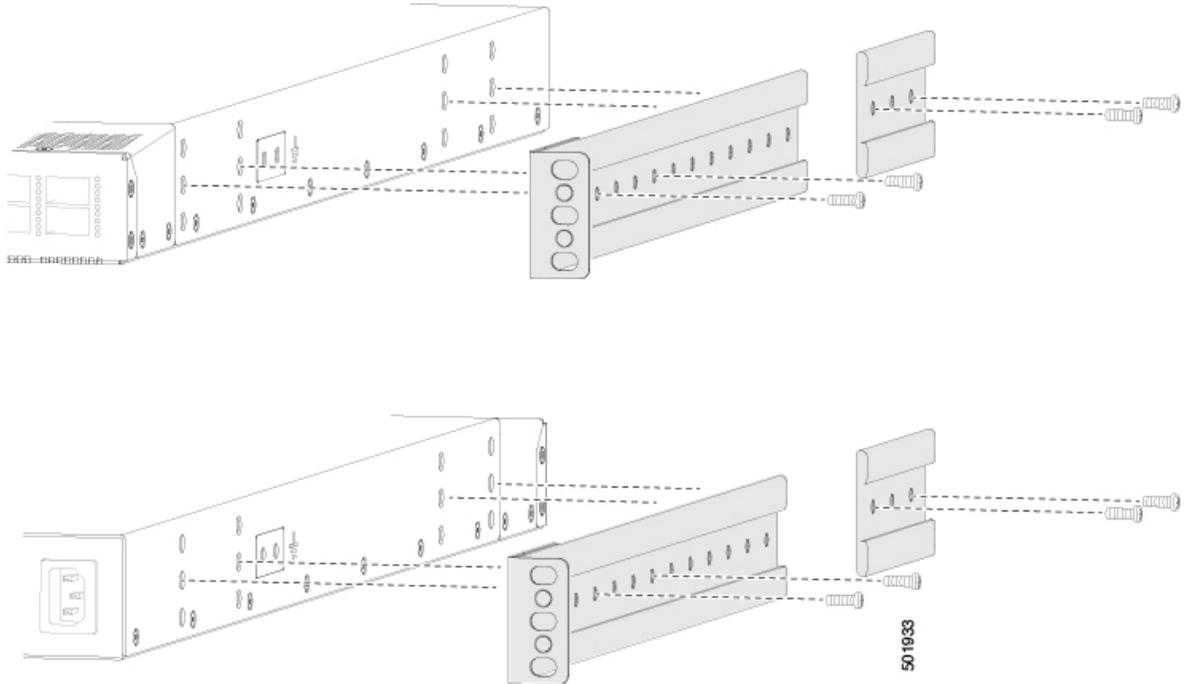
- You have inspected the switch shipment to ensure that you have everything that you ordered.
- Make sure that the switch rack-mount kit includes the following parts:
 - Front rack-mount brackets (2)
 - Rear rack-mount brackets (2)
 - Slider rails (2)
 - M4 x 0.7 x 8-mm Phillips countersink screws (12)
- You install and secure the rack to its location.

Step 1 Install two front rack-mount brackets and the two rear rack-mount brackets to the switch as follows:

- Determine which end of the chassis is to be located in the cold aisle as follows:
 - If the switch has port-side intake modules (fan modules with burgundy coloring), position the switch so that its ports are in the cold aisle.
 - If the switch has port-side exhaust modules (fan modules with blue coloring), position the switch so that its fan and power supply modules are in the cold aisle.

- b) Position the front rack-mount bracket and the rear rack-mount bracket so that its screw holes are aligned to the screw holes on the side of the chassis.

Note You can align the holes in the rack-mount bracket to the holes on the side of the chassis (see the two ways to mount these brackets on a typical chassis, in following figure). The holes that you use depend on the requirements of your rack and the amount of clearance that is required for interface cables (3 inches [7.6 mm] minimum) and module handles (1 inch [2.5 mm] minimum).



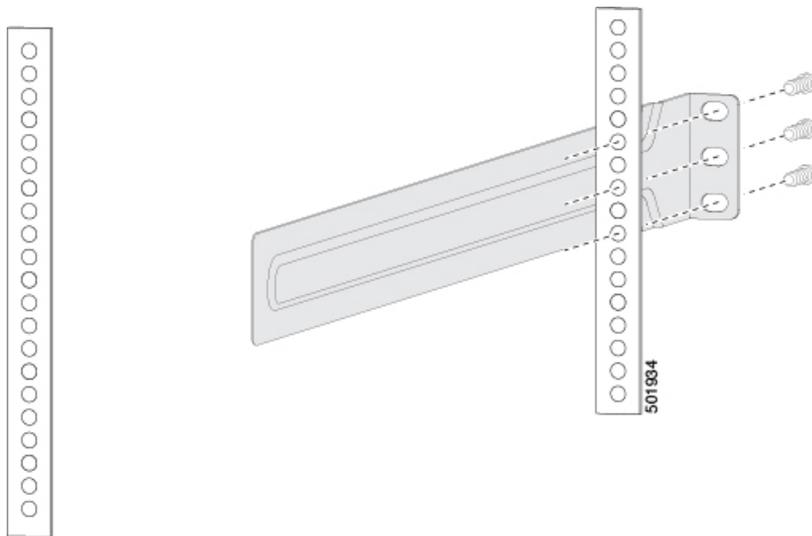
- c) Secure the front-mount bracket and the back-mount bracket to the chassis using four M4 screws and tighten each screw to 12 in-lb (1.36 N·m) of torque.
- d) Repeat Step 1 for the other front rack-mount bracket and the other back-mount bracket on the other side of the switch and be sure to position that bracket the same distance from the front of the switch.

Note Depending on the chassis depth, the back rack-mount bracket may not fit. In that case, there is no need to use the back rack-mount bracket.

Step 2 If you are not installing the chassis into a grounded rack, you must attach a customer-supplied grounding wire to the chassis as explained in the [Grounding the Chassis, on page 15](#) section. If you are installing the chassis into a grounded rack, you can skip this step.

Step 3 Install the slider rails on the rack or cabinet as follows:

- a) Determine which two posts of the rack or cabinet you should use for the slider rails. Of the four vertical posts in the rack or cabinet, two will be used for the front mount brackets attached to the easiest accessed end of the chassis, and the other two posts will have the slider rails.
- b) Position a slider rail at the desired level on the back side of the rack and use 12-24 screws or 10-32 screws, depending on the rack thread type, to attach the rails to the rack (see the following figure). Tighten 12-24 screws to 30 in-lb (3.39 N·m) of torque and tighten 10-32 screws to 20 in-lb (2.26 N·m) of torque.

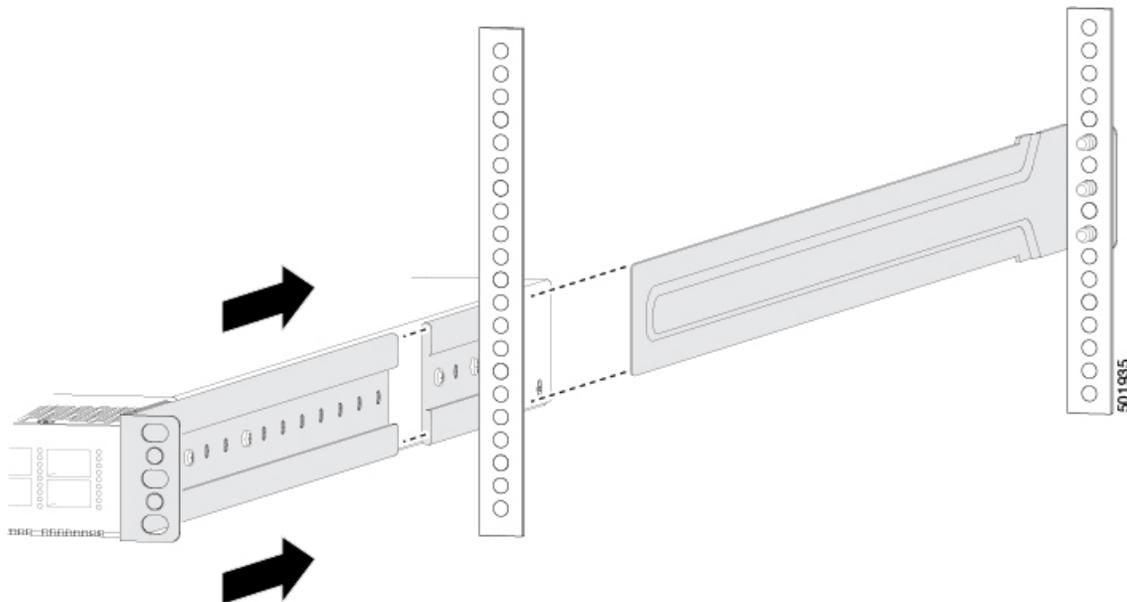


- c) Repeat Step 3 to attach the other slider rail to the other side of the rack.

To make sure that the slider rails are at the same level, you should use a level tool, tape measure. Or carefully count the screw holes in the vertical mounting rails.

Step 4 Insert the switch into the rack and attach it as follows:

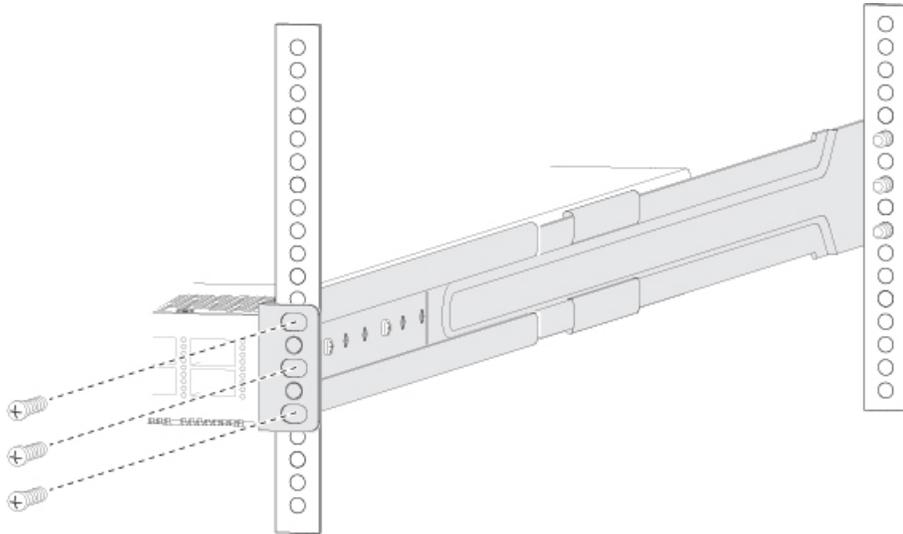
- a) Holding the switch with both hands, position the two rear rack-mount brackets on the switch between the rack or cabinet posts that do not have slider rails attached to them (see the following figure).



- b) Align the two rear rack-mount guides on either side of the switch with the slider rails installed in the rack. Slide the rack-mount guides onto the slider rails, and then gently slide the switch all the way into the rack until the front rack-mount brackets come in contact with two rack or cabinet posts.

Note If you attached a grounding cable to the chassis, you will need to bend one of the rack-mount rails slightly to allow the grounding lug to go behind the rail.

- c) Holding the chassis level, insert screws (12-24 or 10-32, depending on the rack type) in each of the two front rack-mount brackets (using a total of six screws) and into the cage nuts or threaded holes in the vertical rack-mounting rails (see the following figure).



- d) Tighten the 10-32 screws to 20 in-lb (2.26 N·m) or tighten the 12-24 screws to 30 in-lb (3.39 N·m).

Step 5 If you attached a grounding wire to the chassis grounding pad, connect the other end of the wire to the facility ground.

Installing the Switch Using the N3K-C3064-ACC-KIT Rack-Mount Kit

To install the switch, you must attach front and rear mounting brackets to the switch. Then install slider rails on the rear of the rack and slide the switch onto the slider rails. Secure the switch to the front of the rack. Typically, the front of the rack is the side easiest to access for maintenance.



Note You supply the eight 10-32 or 12-24 screws that are required to mount the slider rails and switch to the rack.

Before you begin

- You have inspected the switch shipment to ensure that you have everything that you ordered.
- Make sure that the switch rack-mount kit includes the following parts:
 - Front rack-mount brackets (2)
 - Rear rack-mount brackets (2)
 - Slider rails (2)
 - M4 x 0.7 x 8-mm Phillips countersink screws (12)
- Install and secure the rack to its location.

Step 1

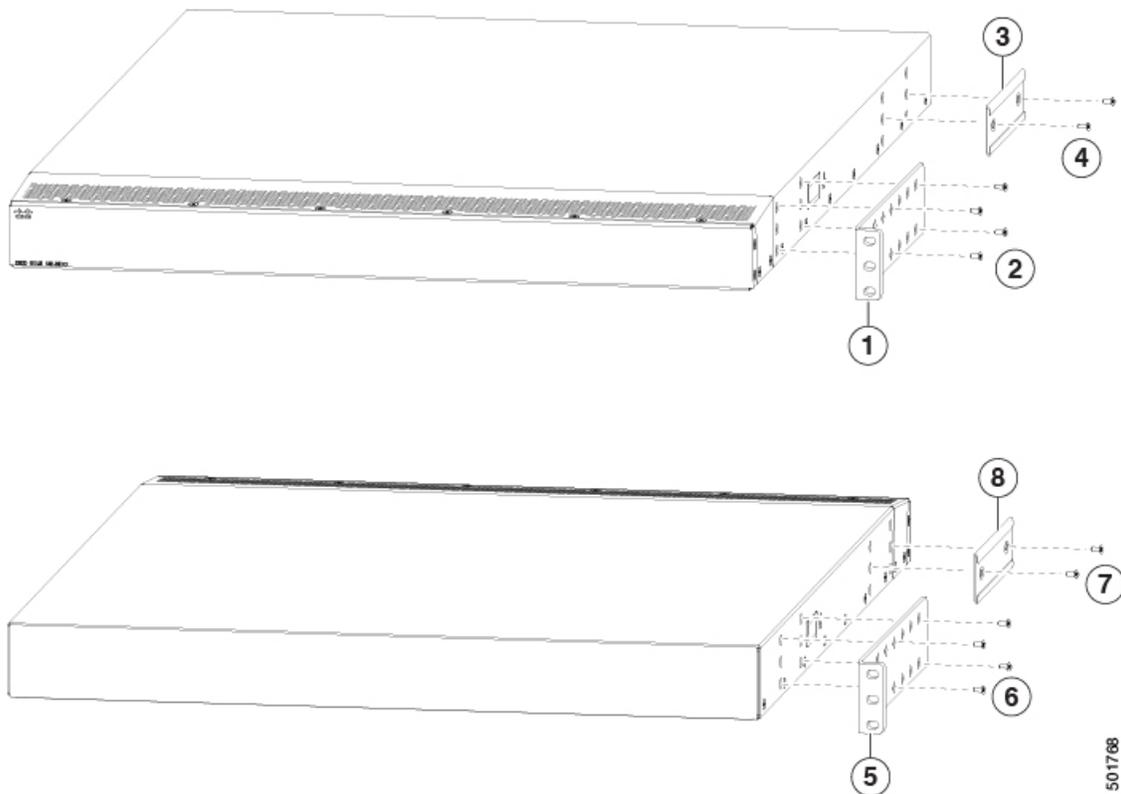
Install two front-mount brackets to the switch as follows:

a) Determine which end of the chassis is to be located in the cold aisle as follows:

- If the switch has port-side intake modules (fan modules with burgundy coloring), position the switch so that its ports are in the cold aisle.
- If the switch has port-side exhaust modules (fan modules with blue coloring), position the switch so that its fan and power supply modules are in the cold aisle.

b) Position a front-mount bracket so that four of its screw holes are aligned to the screw holes on the side of the chassis.

Note You can align any four of the holes in the front rack-mount bracket to four of the six screw holes on the side of the chassis (see the two ways to mount these brackets on a typical chassis, in following figure). The holes that you use depend on the requirements of your rack and the amount of clearance that you require for interface cables (3 inches [7.6 mm] minimum) and module handles (1 inch [2.5 mm] minimum).



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1	Front rack-mount bracket that aligns to the port end of the chassis.	5	Front rack-mount bracket that aligns to the module end of the chassis.
2	Four M4 screws used to attach the bracket to the chassis.	6	Four M4 screws used to attach the bracket to the chassis.
3	Rear rack-mount guide that aligns to the module end of the chassis.	7	Two M4 screws used to attach the bracket to the chassis.

4	Two M4 screws used to attach the bracket to the chassis.	8	Rear rack-mount guide that aligns to the port end of the chassis.
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- c) Secure the front-mount bracket to the chassis using four M4 screws and tighten each screw to 12 in-lb (1.36 N·m) of torque.
- d) Repeat Step 1 for the other front rack-mount bracket on the other side of the switch and be sure to position that bracket the same distance from the front of the switch.

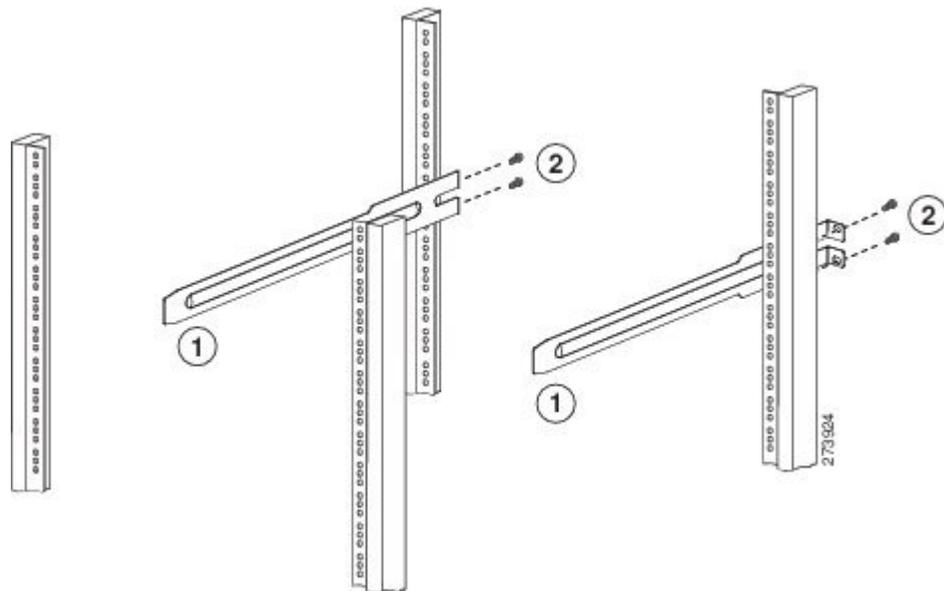
Step 2 Install the two rear rack-mount brackets on the chassis as follows:

- a) Align the two screw holes on a rear rack-mount bracket to the middle two screw holes in the remaining six screw holes on a side of the chassis. If you are aligning the guide to holes that are near the port connections six screw holes on a side of the chassis, see Callout 3 in the previous figure. Otherwise, see Callout 7 in the previous figure.
- b) Attach the guide to the chassis using two M4 screws (see Callout 4 or 8 in the previous figure). Tighten the screws to 12 in-lb (1.36 N·m) of torque.
- c) Repeat Step 2 for the other rear rack-mount bracket on the other side of the switch.

Step 3 If you are not installing the chassis into a grounded rack, you must attach a customer-supplied grounding wire to the chassis as explained in the [Grounding the Chassis, on page 15](#) section. If you are installing the chassis into a grounded rack, you can skip this step.

Step 4 Install the slider rails on the rack or cabinet as follows:

- a) Determine which two posts of the rack or cabinet you should use for the slider rails. Of the four vertical posts in the rack or cabinet, two will be used for the front mount brackets attached to the easiest accessed end of the chassis, and the other two posts will have the slider rails.
- b) Position a slider rail at the desired level on the back side of the rack and use two 12-24 screws or two 10-32 screws, depending on the rack thread type, to attach the rails to the rack (see the following figure). Tighten 12-24 screws to 30 in-lb (3.39 N·m) of torque and tighten 10-32 screws to 20 in-lb (2.26 N·m) of torque.



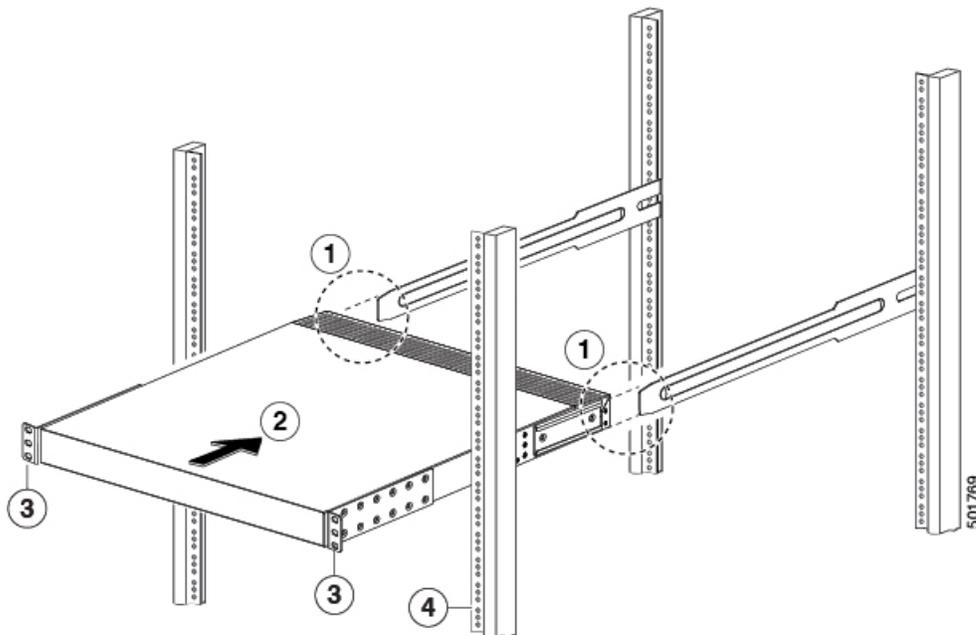
1	Slider rail with screw holes aligned to screw holes in rack.	2	Two customer-supplied 12-24 or 10-32 screws that are used to attach each slider rail to the rack.
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- c) Repeat Step 3 to attach the other slider rail to the other side of the rack.

To make sure that the slider rails are at the same level, use a level tool, tape measure, or carefully count the screw holes in the vertical mounting rails.

Step 5 Insert the switch into the rack and attach it as follows:

- a) Holding the switch with both hands, position the two rear rack-mount brackets on the switch between the rack or cabinet posts that do not have slider rails attached to them (see the following figure).

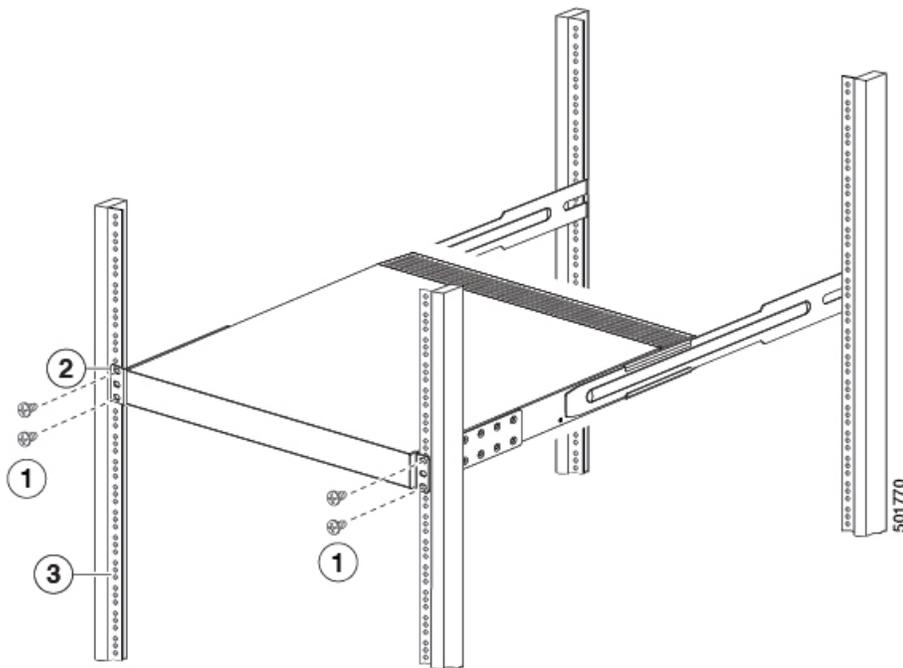


1	Align the two rear rack-mount bracket guides with the slider rails installed in the rack.	3	Front-mount brackets.
2	Slide the rack-mount guides onto the slider rails until the front rack-mount brackets come in contact with the front rack-mount rails.	4	Mounting rails on rack or cabinet posts.

- b) Align the two rear rack-mount guides on either side of the switch with the slider rails installed in the rack. Slide the rack-mount guides onto the slider rails, and then gently slide the switch all the way into the rack until the front rack-mount brackets come in contact with two rack or cabinet posts.

Note If you attached a grounding cable to the chassis, you will need to bend one of the rack-mount rails slightly to allow the grounding lug to go behind the rail.

- c) Holding the chassis level, insert two screws (12-24 or 10-32, depending on the rack type) in each of the two front rack-mount brackets (using a total of four screws) and into the cage nuts or threaded holes in the vertical rack-mounting rails (see the following figure).



1	Fasten the chassis to the front of the rack with two 12-24 or 10-32 screws on each side.	3	Mounting rails on rack or cabinet posts.
2	Front-mount bracket.		

d) Tighten the 10-32 screws to 20 in-lb (2.26 N·m) or tighten the 12-24 screws to 30 in-lb (3.39 N·m).

Step 6 If you attached a grounding wire to the chassis grounding pad, connect the other end of the wire to the facility ground.

Installing a 4 (RU) Chassis in a Four-Post Rack

This section describes the rack installation for the Cisco Nexus 3408-S platform switch into a four-post rack.

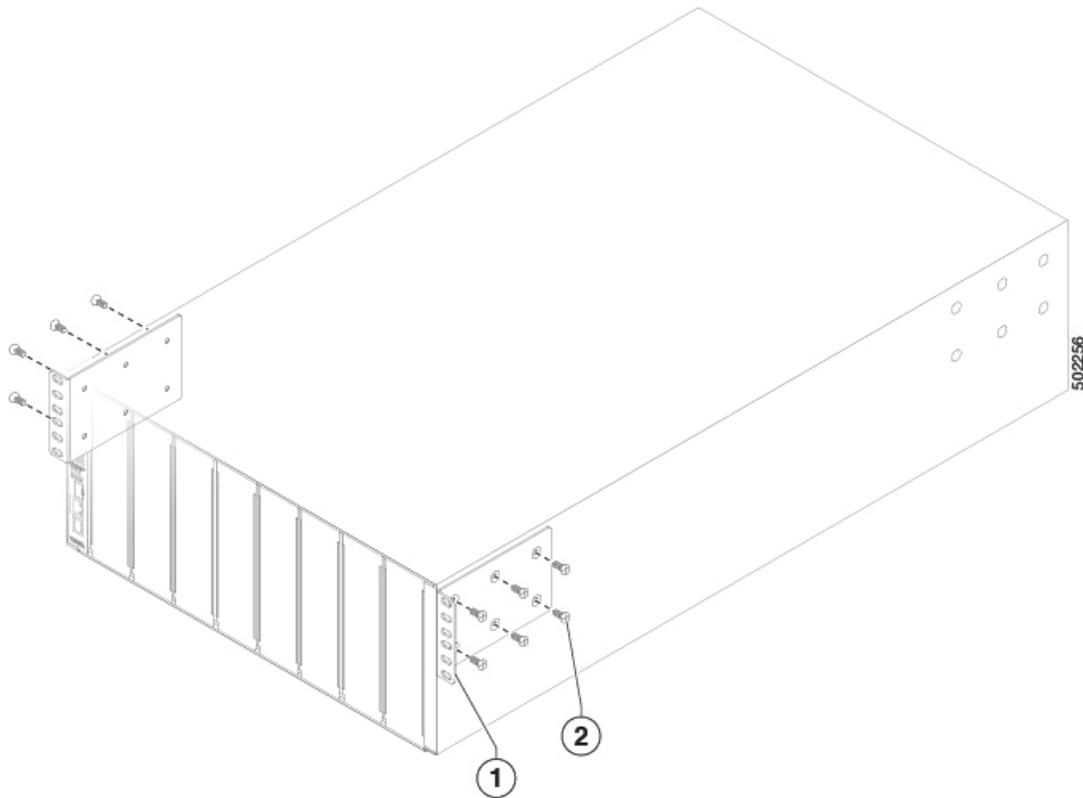
Before moving or lifting the chassis, follow these guidelines:

- Disconnect all cables from the switch.
- Ensure that there is adequate space around the switch for servicing and airflow.
- Never attempt to lift an object that is too heavy for you to lift by yourself.
- Ensure that you have solid footing. Distribute the weight of the switch is evenly between your feet.
- Lift the switch slowly, keeping your back straight. Lift with your legs, not with your back. Bend at the knees, not at the waist.

Step 1 Attach two front-mount brackets to the sides of the chassis as follows:

- a) Align the two holes in one side of a front-mount bracket to the holes on the left or right side of the chassis as shown in the following figure.

Figure 1: Aligning and Attaching Front-Mount Brackets to the Chassis



1	Front rack-mount bracket	2	M4 x 6-mm screws
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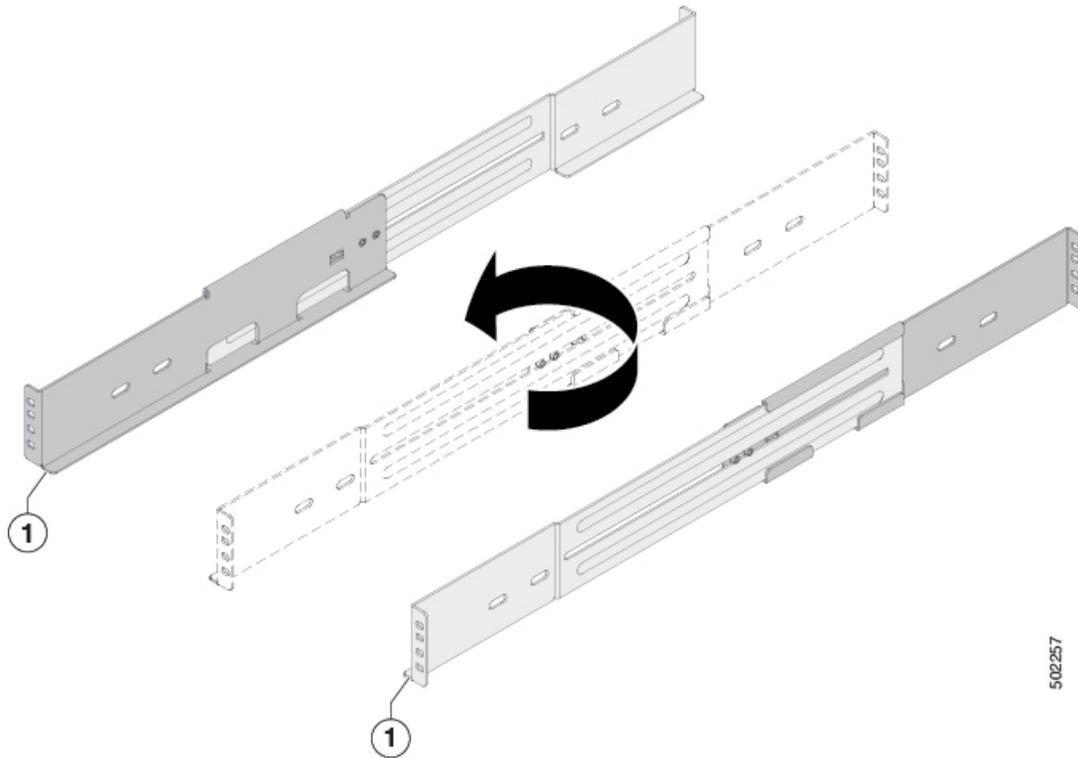
- b) Use M4 x 6 mm screws to attach the bracket to the chassis and tighten each screw to 12 in-lb (1.36 N·m) of torque.
 c) Repeat Steps 1a and 1b to attach the other front-mount bracket to the other side of the chassis.

Step 2 Align the bottom-support rails so that they form a shelf for the chassis.

Note The bottom-support rails are identical and interchangeable. Use each for either the right, or the left side of the rack.

- a) Rotate one of the rails as shown in the following figure.

Figure 2: Aligning the Bottom-Support Rails



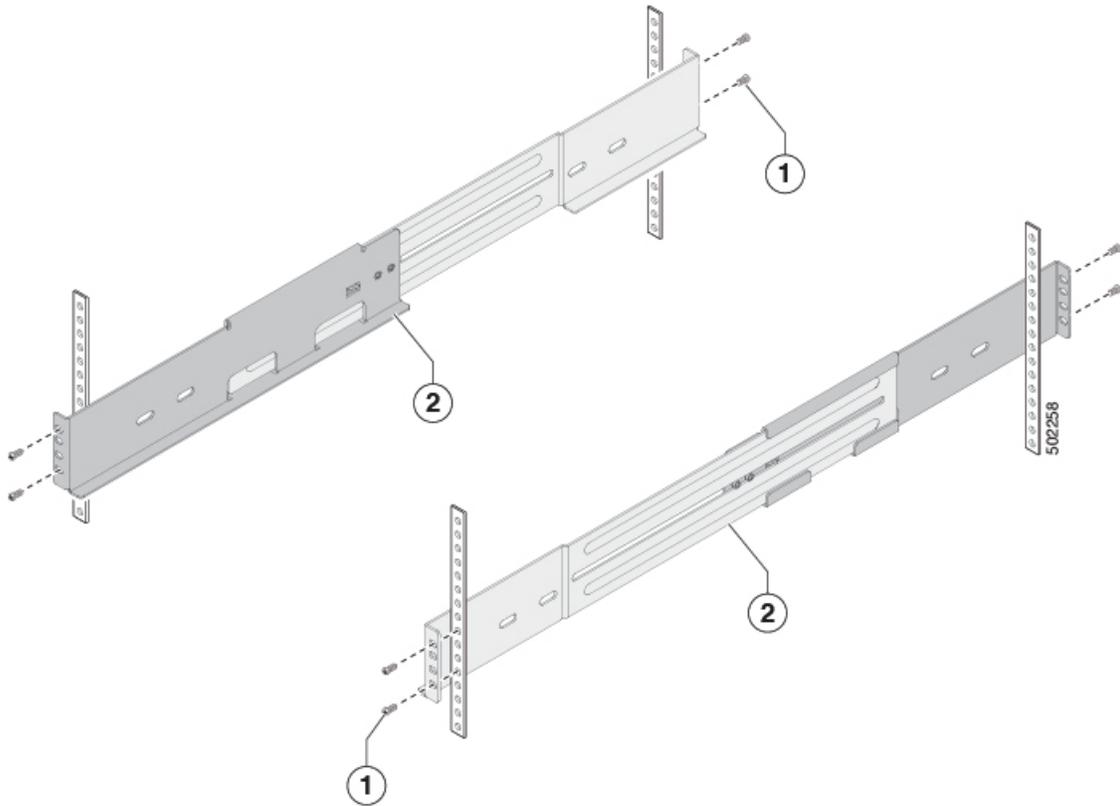
1	Bottom-support rail (2)		
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Step 3

Attach the bottom-support rails on the rack as follows:

- a) Position an expanding set of bottom-support brackets on the rack with each end touching a vertical mounting rail on the front and rear of the rack as shown in the following figure..

Figure 3: Positioning the Bottom-Support Rails



1	Screws holding the bottom-support bracket to the rack	2	The bottom-support brackets (2)
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- b) Holding the bottom-support rail level, attach the rail to the front and rear vertical mounting rails using four customer-supplied screws that are appropriate for the rack (use two screws for each vertical mounting rail), and tighten each screw to the appropriate torque setting for that screw.

Typically, you use one of the following types of screws and the associated torque settings when tightening them:

- M4 screws—Use 12 in-lb (1.36 N·m) of torque.
- M6 screws—Use 40 in-lb (4.5 N·m) of torque.
- 10-32 screws— Use 20 in-lb (2.26 N·m) of torque.

If the rack requires another type of screw, use the appropriate torque setting for that type of screw.

- c) Repeat Steps 3a and 3b to attach the other expanding bottom-support rail to the other side of the rack at the same level as the attached bottom-support rail.

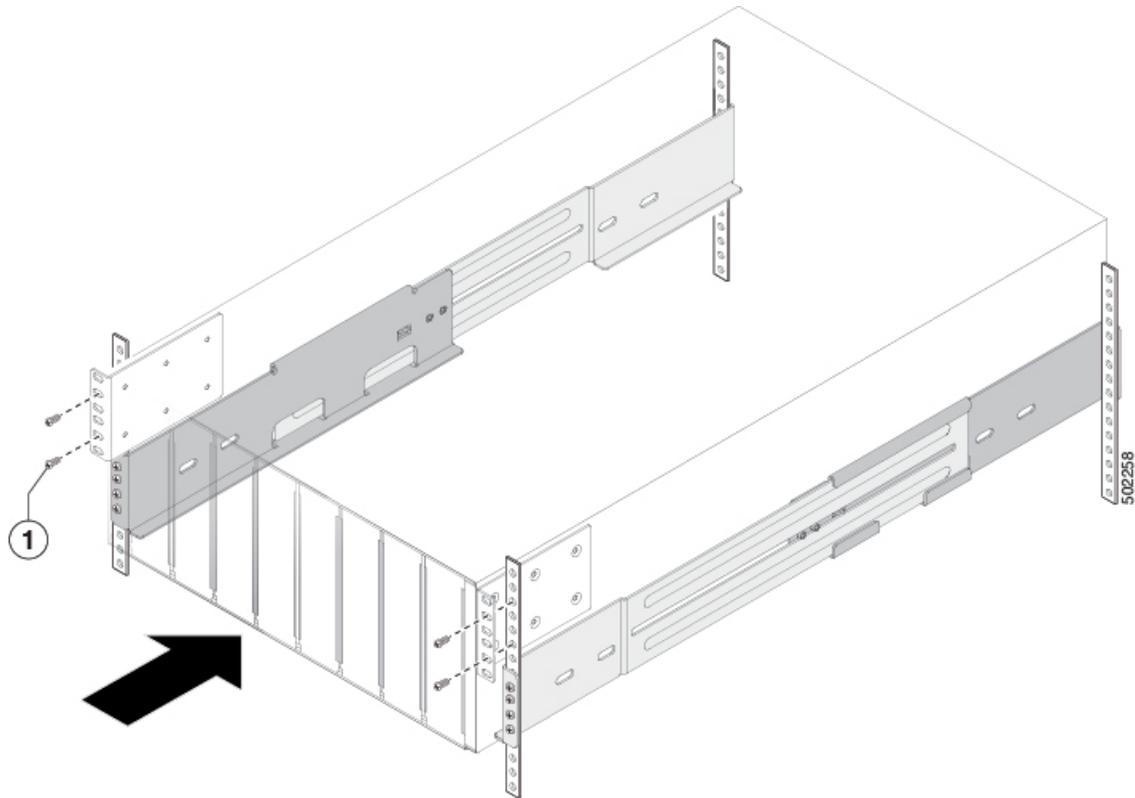
Note Verify that the two sets of bottom-support rails are level with each other before going to the next step.

Step 4 Install the chassis in the rack as follows:

- a) Slide the power supply end of the chassis onto the installed bottom-support rails as shown in the following figure.

When you have fully pushed the chassis all the way onto the bottom-support rails, the chassis stops when the front-mount brackets touch the front vertical mounting rails.

Figure 4: Sliding the Chassis onto the Bottom-Support Rails



1	Rack-mount screw		
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- b) Use screws that are appropriate for the rack to attach the front-mount brackets to the rack.

Typically, you use one of the following types of screws and the associated torque settings when tightening them:

- M4 screws—Use 12 in-lb (1.36 N·m) of torque.
- M6 screws—Use 40 in-lb (4.5 N·m) of torque.
- 10-32 screws— Use 20 in-lb (2.26 N·m) of torque.

If the rack requires another type of screw, use the appropriate torque setting for that type of screw.

Grounding the Chassis

The switch chassis is automatically grounded when you properly install the switch in a grounded rack with metal-to-metal connections between the switch and rack.

You can alternatively ground the chassis (this is required if the rack is not grounded) by attaching a customer-supplied grounding cable to the chassis grounding pad and the facility ground.



Note The location of the grounding pad on each switch can be found in the [Overview](#) section.

The switch is grounded when you connect the chassis and the power supplies to the earth ground in the following ways:

- You connect the chassis (at its grounding pad) to the data center ground. If the rack is fully-bonded and grounded, you can ground the switch by connecting it to the rack.



Note The chassis ground connection is active even when the power supply modules have not been grounded or connected to the switch.



Warning **Statement 1024**—Ground Conductor

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning **Statement 1046**—Installing or Replacing the Unit

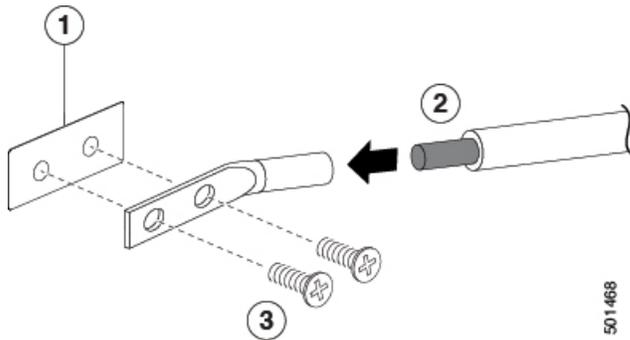
When installing or replacing the unit, the ground connection must always be made first and disconnected last

Before you begin

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the switch chassis into a bonded rack (see the rack manufacturer's instructions for more information) that now has a connection to the data center earth ground, you can ground the chassis by installing it into the rack. Otherwise, you must connect the chassis grounding pad directly to the data center ground.

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- Step 1** Use a wire-stripping tool to remove approximately 0.75 inches (19 mm) of the covering from the end of the grounding wire.
- Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug, and use a crimping tool to crimp the lug to the wire (see Callout 2 in the following figure). Verify that the ground wire is securely attached to the grounding lug by attempting to pull the wire out of the crimped lug.

Figure 5: Grounding the Chassis



1	Chassis grounding pad	3	Two M4 screws used to secure the grounding lug to the chassis
2	Grounding cable, with 0.75 in. (19 mm) of insulation stripped from one end, inserted into the grounding lug and crimped in place		

Step 3 Secure the grounding lug to the chassis grounding pad with two M4 screws (see Callouts 1 and 3 in the previous figure), and tighten the screws to 12 in lb (1.36 N·m) of torque.

Step 4 Prepare the other end of the grounding wire and connect it to an appropriate grounding point in your site to ensure an adequate earth ground for the switch. If the rack is fully bonded and grounded, connect the grounding wire as explained in the documentation provided by the vendor for the rack.

Starting the Switch

To power up the switch, follow these steps:

Before you begin

- Verify that the switch is fully installed and secured to a rack.
- Verify that the switch is adequately grounded to the facility earth ground or to a grounded rack.
- Verify that all of the fan and power supply modules are installed in the chassis.
- If you are using a DC power source, verify that the circuit is shut off at a circuit breaker.

Step 1 If the switch has AC power supplies, connect those power supplies to an AC power source as follows:

- Verify that the AC power source is turned off at the circuit breaker.
- Plug the power cable into the power receptacle on the power supply.
- Attach the other end of the power cable to the AC power source.
- Turn on the power at the circuit breaker.
- Verify that the power supply is functioning by making sure that the OK LED turns green and the FAULT LED is off.

- Step 2** If the switch has HVAC/HVDC power supplies, connect those power supplies to a power source as follows:
- a) Using the recommended high voltage power cable for your country or region, connect the Anderson Power Saf-D-Grid connector on the power cable to the power receptacle on the power supply. Make sure that the connector clicks when fully pushed into the receptacle.
 - b) Connect the other end of the power cable to a power source.
 - When connecting to an HVAC power source, insert the C14 or LS-25 plug in a receptacle for the HVAC power source.
 - When connecting to an HVDC power source, do the following:
 1. Verify that the power is turned off at a circuit breaker for the power source terminals.
 2. Remove the nuts from each of the terminal posts for the power supply.
 3. Place the power cable negative-wire terminal ring on the negative terminal for the power source and secure them with a terminal nut.
 4. Place the power cable positive-wire terminal ring on the positive terminal for the power source and secure them with a terminal nut.
 5. Place the power cable ground-wire terminal ring on the ground terminal for the power source and secure them with a terminal nut.
 6. If there is a safety cover for the power source terminals, place and secure it over the terminals to avoid an electrical shock hazard.
 7. Turn on the power at the power source circuit breaker.
- Step 3** If the switch has DC power supplies, connect those power supplies to a DC power source as follows:
- a) Verify that the DC power source is turned off at the circuit breaker.
 - b) Remove the clear plastic safety cover that prevents you from touching the negative (-) and positive (+) terminals on the power supply.
 - c) Connect a negative cable from the power source to the left (-) terminal on the power supply.
 - d) Connect a positive cable from the power source to the right (+) terminal on the power supply.
 - e) Clip on the clear plastic safety cover over the power supply terminals to prevent accidental touching of these terminals.
 - f) Turn on the power at the circuit breaker.
 - g) Verify that the power supply is functioning by making sure that the OK LED turns green and the FAULT LED is off.
- Step 4** Listen for the fans; they should begin operating when the power cable is plugged in.
- Step 5** After the switch boots, verify that the following LEDs are on:
- Power supply LED—lit and green
If not green, try removing the module part way from its slot and reinstalling it.
 - Fan LED—lit and green
If not green, try removing the module part way from its slot and reinstalling it.
 - System Status LED—lit and green (if this LED is orange or red, then one or more environmental monitors is reporting a problem.)

- Link LEDs for the Ethernet connector—Off
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