



## 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 3550-T Triton* for important Safety Information.



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### 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






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**Warning Statement 1017**—Restricted Area

This unit is intended for installation in restricted access areas. A restricted access area can be accessed by skilled, instructed, or qualified personnel.

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**Warning Statement 1030**—Equipment Installation

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

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<b>Personnel</b>	Only a skilled person or an instructed person should be allowed to install, replace, or service this equipment.
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<b>Environment</b>	<ol style="list-style-type: none"> <li>1. <b>Access</b>This unit is intended for installation in restricted access areas. A restricted access area can only be accessed by skilled, instructed or qualified personnel.</li> <li>2. <b>GPS</b>To reduce the risk of electric shock, the shield of the coaxial cable must be connected to the building earth.   <b>Caution</b> Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (e.g. U.S.: NFPA 70, National Electrical Code, Article 810, Canada: Canadian Electrical Code, Section 54).</li> <li>3. <b>Ambient temperature</b> Make sure the ambient temperature does not exceed the maximum ambient temperature allowed for the Cisco Nexus 3550-T Programmable Switch Platform (104F, 40C). If installed in a closed or multi-unit rack assembly, the ambient temperature of the rack during operation will be greater than room ambient.</li> <li>4. <b>Air flow</b>Install the Nexus 3550-T in the rack in a way that provides sufficient air flow for safe operation.</li> <li>5. <b>Mechanical loading</b>Mount the Nexus 3550-T in the rack with a mechanical load that is evenly distributed and not excessive.</li> <li>6. <b>Circuit overloading</b>Ensure that no overloading of the circuits occurs which might affect overcurrent protection and supply wiring. The ratings are provided on the unit.</li> <li>7. <b>Earthing</b>  Ensure that the rack-mounted equipment is earthed reliably. Consider using supply connections other than direct connections to the branch circuit (e.g. use of power strips).</li> </ol>
<b>Power</b>	<p>Check that your Nexus 3550-T is rated to be used with the mains power in your country. Total Nexus 3550-T rating:</p> <ul style="list-style-type: none"> <li>• 90-264V AC @ 6A max, 47/63 Hz</li> </ul>
<b>Before servicing</b>	Disconnect the two power supply cables before servicing.
<b>Power cables</b>	Ensure the Nexus 3550-T uses mains power cables approved in the country of operation
<b>Warning</b> <b>Clock battery</b>	The Nexus 3550-T has a battery-powered real-time clock circuit. There is a danger of explosion if the battery is replaced incorrectly. Replace only with CR2032 type coin cells. Discard used batteries according to the manufacturer's instructions.

<b>Caution</b>	<b>Laser safety</b>	SFP modules used in the Nexus 3550-T can be a CLASS 1 LASER PRODUCT. Invisible laser radiation may be emitted from the aperture of an SFP module when the fiber cables are disconnected. Do not stare into the open aperture of an SFP module and avoid exposure to laser radiation when a fiber cable is disconnected from an SFP module.
<b>Caution</b>	<b>21 CFR 1040</b>	Pluggable optical modules comply with IEC 60825-1 Ed. 3 and 21 CFR 1040.10 and 1040.11 with or without exception for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice No. 56, dated May 8, 2019. Conforme à la norme 21 CFR 1040.10 et 1040.11, sauf conformité avec la norme IEC 60825-1 Ed. 3., comme décrit dans l'avis relatif au laser no. 56, daté du 8 mai 2019.
		To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.
		This equipment must be grounded. To reduce the risk of electric shock, the power cord, plug or combination must be connected to a properly grounded electrode, outlet or terminal. Verification of the protective earthing of the socket outlet should be carried out by a skilled person.
<b>Warning</b>	<b>Warranty void if opened</b>	<b>Do not open the case of the Nexus 3550-T</b> The warranty of the Nexus 3550-T will be void if the case is opened.
<b>Warning</b>	<b>FCC Compliance</b>	This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Fiber type and Core diameter ( $\mu\text{m}$ )	Wavelength (nm)	Max. Power (mW)	Beam divergence (rad)
SM 11	1200 – 1400	39 - 50	0.1 - 0.11
MM 62.5	1200 – 1400	150	0.18 NA
MM 50	1200 – 1400	135	0.17 NA
SM 11	1400 – 1600	112 - 145	0.11 - 0.13

## Installation Options with Rack-Mount Kits, Racks, and Cabinets

The rack-mount kit enables you to install the switch into racks of varying depths. You can position the switch with easy access to either the port connections or the fan and power supply modules.

You can install the switch using the following 1 (RU) rack-mount options:

- Rack-mount kit (NXK-ACC-KIT-1RU) which you can order from Cisco. This option offers you easy installation, greater stability, increased weight capacity, added accessibility, and improved removability with front and rear removal.
- Rack-mount kit (NCS-1RU-ACC-KIT) which you can order from Cisco.
- Rack-mount kit (N3K-C3064-ACC-KIT) which you can order from Cisco.

You can install the switch in the following types of racks:

- Open EIA rack
- Perforated EIA cabinet

The rack or cabinet that you use must meet the requirements listed the in [General Requirements and Guidelines for Cabinets and Racks](#) section.



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**Note** You are responsible for verifying that your rack and rack-mount hardware comply with the guidelines that are described in this doc.

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## Preparing to Install the Chassis

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

The installation site meets the following requirements:

- Environmental requirements for temperature, humidity, altitude, and air particulates.
- Cabinet or rack is installed and meets the requirements for the switch.



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

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- 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 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.



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

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- 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.



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**Caution** Avoid UPS types that use ferroresonant technology. These UPS types can become unstable with systems such as the Cisco Nexus 3550-T switches. These switches can have substantial current draw fluctuations because of fluctuating data traffic patterns.

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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.



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**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.

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**Note** For AC input application, please refer to the statement below:

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**Warning** **Statement 1005**—Circuit Breaker

This product relies on the building's installation for short-circuit (overcurrent) protection. To reduce risk of electric shock or fire, ensure that the protective device is rated not greater than:

20 A

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### Package Contents

The Nexus 3550-T box should contain the following items:

- Nexus 3550-T box
- Nexus 3550-T Chassis
- Rackmount kit
  - 8x M6 rack-mounting nuts
  - 8x M6 rack-mounting bolts
  - 8x M6 rack-mounting washers
- 2x IEC power leads
- 1x Serial port adapter cable
- 2x Mounting extension rails

Already installed should also be:

- 2x Power supply modules

- 2x Fan modules



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**Note** The power supplies have an arrow on the exhaust fan that points in the direction of airflow. Fan modules are colored red for port-side intake and blue for port-side exhaust.

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

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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 Philips 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



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**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.

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

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**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.

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To inspect the switch, follow these steps:

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- 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
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## Mount the Cisco Nexus 3550-T Programmable Switch Platform

Since the power supplies and fans add significant weight to the Nexus 3550-T, We recommend that the system is rack mounted *prior* to installing them.



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**Note** You will require two people to complete the installation.

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To mount the Nexus 3550-T, perform the following steps:

1. Clip the supplied-mounting nuts into the rack as shown, noting the gap of one notch between the nuts.
2. One person holds the Nexus 3550-T, aligning the front panel of the Nexus 3550-T with the nuts.
3. The second person affixes the washers and bolts to each of the four mounting holds on the front panel of the Nexus 3550-T, securely fastening them to the nuts.

## Mount the Cisco Nexus 3550-T Programmable Switch Platform with Rear Support Rails

The Nexus 3550-T ships with rear support rails. You can add these rails to provide extra structural support for the rack system.

To mount the Nexus 3550-T with rear support rails, perform the following steps:



1. Fasten the rear rails at the desired height.

*Figure 1: Attaching the right hand side rail.*



*Figure 2: Attaching the left hand side rail.*



2. Lift the Nexus 3550-T to the desired height and align the installed rails with the rail mounting holes on the rear of the Nexus 3550-T.
3. Slowly rack the Nexus 3550-T by sliding back onto the rails, until the front is flush with the rack.
4. Fasten the Nexus 3550-T onto the rack as per the method for installing the front mount bolts. Due to the Nexus 3550-T's weight, the installation might be easier with the aid of another person.

Figure 3: Fasten the Nexus 3550-T in the normal manner.

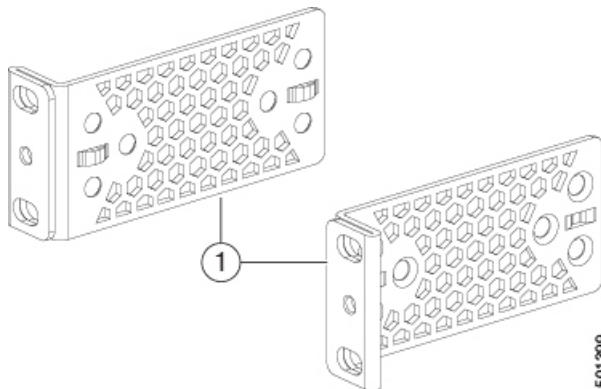


## Installing a 1 (RU) Chassis in a Two-Post Rack

This section describes the rack installation for the Cisco Nexus 3550-T switch into a two-post rack.

To install a switch, you must attach mounting brackets to the switch and secure the switch to the rack. Installation in racks other than 19-inch racks requires a bracket kit not included with the switch.

The following figure shows the standard 19-inch mounting brackets.



1	19-inch brackets (C3850-RACK-KIT=)	
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### SUMMARY STEPS

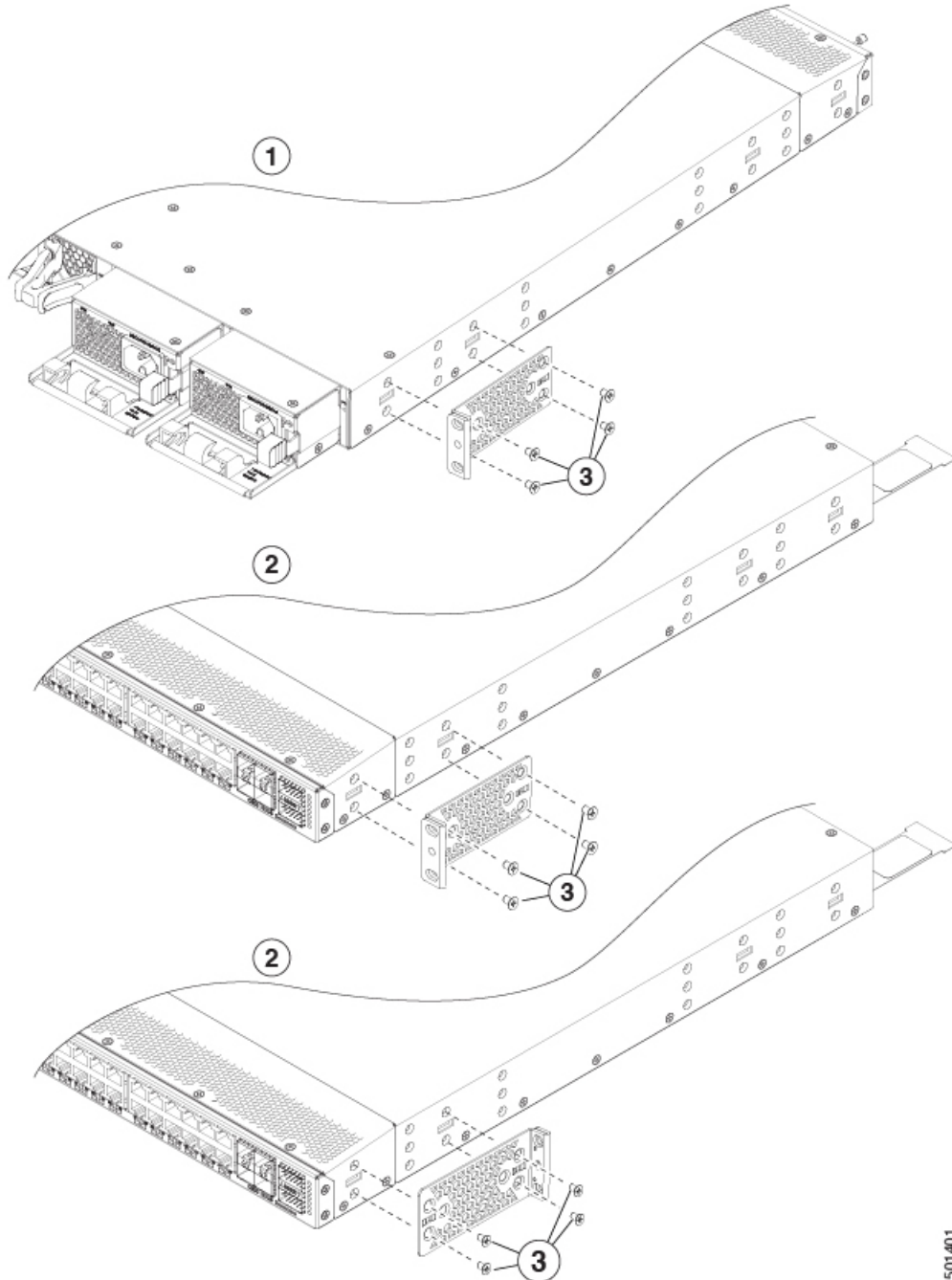
1. Install the brackets to a typical switch.
2. Install the chassis into the rack.

### DETAILED STEPS

- Step 1** Install the brackets to a typical switch.
- 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 will be 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 will be in the cold aisle.

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



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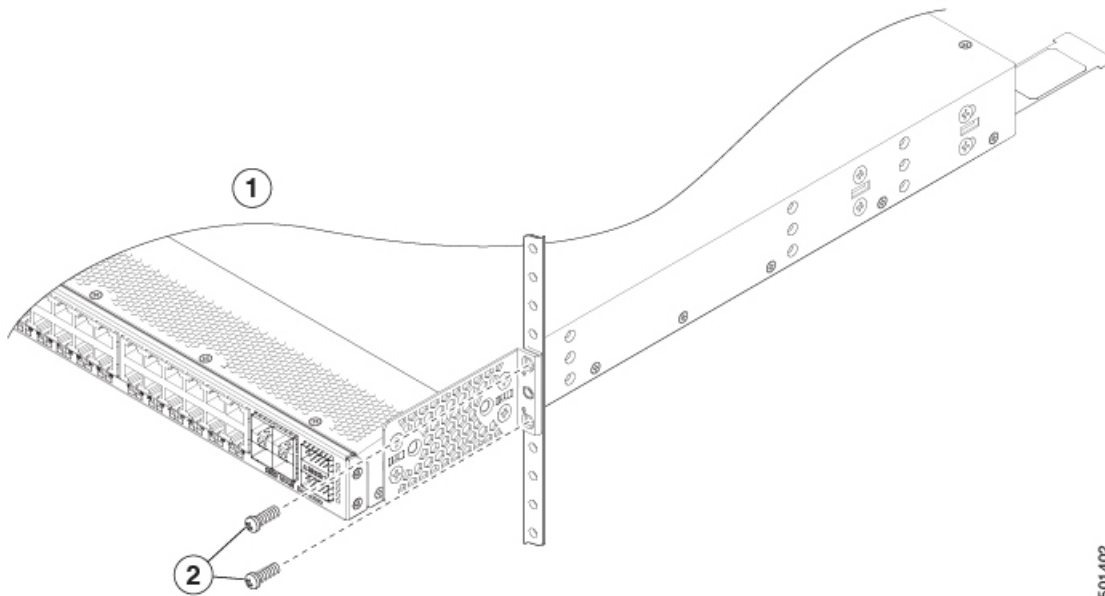
1	Rear-mounting position
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2	Front-mounting position
3	Number-8 Philips flat-head screws (4 each bracket)

- c) Secure the bracket to the chassis using four Number-8 Philips flat-head screws and tighten each screw to 12 in-lb (1.36 N·m) of torque.
- d) Repeat previous step 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 chassis into the rack.

- a) Use two M4 screws to attach the brackets to the rack.



1	Front-mounting position	2	M4 screws (2 each side)
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## 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.



**Note** An electrical conducting path shall exist between the product chassis and the metal surface of the enclosure or rack in which it is mounted or to a grounding conductor. Electrical continuity shall be provided by using thread-forming type mounting screws that remove any paint or non-conductive coatings and establish a metal-to-metal contact. Any paint or other non-conductive coatings shall be removed on the surfaces between the mounting hardware and the enclosure or rack. The surfaces shall be cleaned and an antioxidant applied before installation.

You can also ground the chassis, which is required if the rack is not grounded, by attaching a customer-supplied grounding cable. Attach the cable to the chassis grounding pad and the facility ground.



**Warning Statement 1024—Ground Conductor**

This equipment must be grounded. To reduce the risk of electric shock, 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**

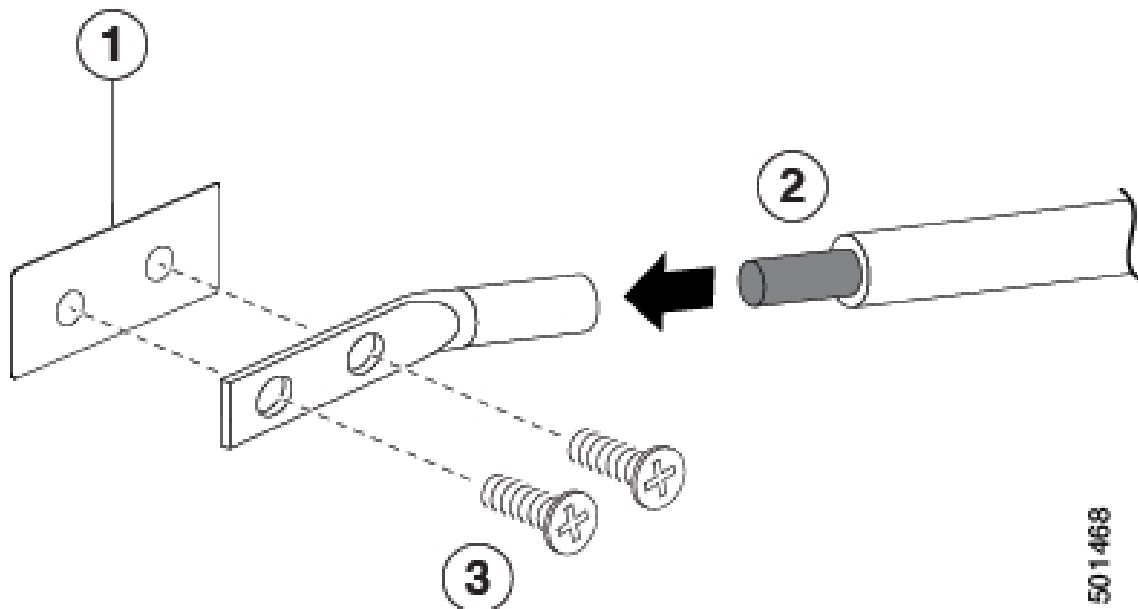
To reduce risk of electric shock, when installing or replacing the unit, the ground connection must always be made first and disconnected last.

**Before you begin**

Before you can ground the chassis, you must have a connection to the earth ground for the data center building.

**Step 1** Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire. We recommend 6-AWG wire for the U.S. installations.

**Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug. Use a crimping tool to crimp the lug to the wire, see 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.



1 Chassis grounding pad

3 2 M4 screws are used to secure the grounding lug to the chassis

- 2 | Grounding cable, with 0.75 in. (19 mm) of insulation that is stripped from one end, which is 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 the previous figure. Tighten the screws to 11 to 15 in-lb (1.24 to 1.69 N·m) of torque.

**Step 4** Prepare the other end of the grounding wire and connect it to the facility ground.

## 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 the chassis has only one power supply, there must be a blank module (N2200-P-BLNK) in the open power supply slot to maintain the designed airflow.

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

- a) Verify that the AC power source is turned off at the circuit breaker.
- b) Plug the power cable into the power receptacle on the power supply.
- c) Attach the other end of the power cable to the AC power source.
- d) Turn on the power at the circuit breaker.
- e) 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 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.

**Step 3** Listen for the fans; they should begin operating when the power cable is plugged in.

**Step 4** 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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