

ExtremeSwitching SLX 9030 Hardware Installation Guide

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Preface

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This section describes the text conventions used in this document, where you can find additional information, and how you can provide feedback to us.

Conventions

This section discusses the conventions used in this guide.

Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE

A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION

An Attention statement indicates a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.



CAUTION

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used to highlight specific words or phrases.

Format	Description
bold text	Identifies command names. Identifies keywords and operands. Identifies the names of GUI elements.
<i>italic text</i>	Identifies text to enter in the GUI. Identifies emphasis. Identifies variables. Identifies document titles.

Format	Description
Courier font	Identifies CLI output.
	Identifies command syntax examples.

Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
<i>italic text</i>	Identifies a variable.
[]	Syntax components displayed within square brackets are optional.
	Default responses to system prompts are enclosed in square brackets.
{ x y z }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x y	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member[member...]</i> .
\	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

- [Current Product Documentation](#)
- [Release Notes](#)
- [Hardware/software compatibility matrices](#) for Campus and Edge products
- [Supported transceivers and cables](#) for Data Center products
- [Other resources](#), like white papers, data sheets, and case studies

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Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

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1. Go to www.extremenetworks.com/support/service-notification-form.
2. Complete the form (all fields are required).
3. Select the products for which you would like to receive notifications.

NOTE

You can modify your product selections or unsubscribe at any time.

4. Select **Submit**.

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The Information Development team at Extreme Networks has made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information in the document.
- Broken links or usability issues.

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- Access the feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at documentation@extremenetworks.com.

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

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Supported hardware and software

The ExtremeSwitching SLX 9030 comes in two switch models, the SLX 9030-48S and the SLX 9030-48T models with high-performance, nonblocking network switching chipset with 880Gbps capacity. The switch supports 48x10G/1G (SFP+) + 4x100G/40G (QSFP+) (For SLX-9030-48S) or 48x10G/1G/100M (RJ-45) + 4x100G/40G (QSFP+) (For SLX-9030-48T), a console port (RS232 in RJ45, 115200 bps) and management interface (RJ45 100/1000 Mbps).

The following table describes the ExtremeSwitching SLX 9030 Models.

TABLE 1 SLX 9030 Switch Models

Part number	Description	Introduced OS	Currently supported
EN-SLX-9030-48S-4C-AC-F	Extreme SLX 9030-48S Switch AC with Front to Back Airflow, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes
EN-SLX-9030-48S-4C-AC-R	Extreme SLX 9030-48S Switch AC with Back to Front Airflow, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes
EN-SLX-9030-48S-4C	Extreme SLX 9030-48S Switch with No Power supplies, no fans, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes
EN-SLX-9030-48T-4C-AC-F	Extreme SLX 9030-48T 10GBaseT Switch AC with Front to Back Airflow, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes
EN-SLX-9030-48T-4C-AC-R	Extreme SLX 9030-48T 10GBaseT Switch AC with Back to Front Airflow, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes
EN-SLX-9030-48T-4C	Extreme SLX 9030-48T 10GBaseT Switch with No Power supplies, no fans, Supports 48x10GE/1GE + 4x100GE/40GE	SLX-OS 18x.1.00	Yes

The following table describes the SLX 9030 Switch Firmware License.

TABLE 2 SLX 9030 Switch Advance Feature License

Part number	Description	Introduced OS	Currently supported
EN-SLX-9030-ADV-LIC-P	SLX 9030 Advanced Feature License for BGP-EVPN, gRPC	SLX-OS 18x.1.00	Yes

The following table list the SLX 9030 Switch supported power supplies FRU.

TABLE 3 Supported SLX 9030 Switch Power Supplies

Part number	Description	Introduced OS	Currently supported
10960	770W AC power supply, Front-to-Back airflow	SLX-OS 18x.1.00	Yes
10961	770W AC power supply, Back-to-Front airflow	SLX-OS 18x.1.00	Yes

TABLE 3 Supported SLX 9030 Switch Power Supplies (continued)

Part number	Description	Introduced OS	Currently supported
10962	1100W DC power supply, Front-to-Back airflow	SLX-OS 18x.1.00	Yes
10963	1100W DC power supply, Back-to-Front airflow	SLX-OS 18x.1.00	Yes

The following table list the SLX 9030 Switch supported Fan modules.

TABLE 4 Supported SLX 9030 Switch Fan Modules

Part number	Description	Introduced OS	Currently supported
17115	Fan module, Front to Back airflow	SLX-OS 18x.1.00	Yes
17116	Fan module, Back to Front airflow	SLX-OS 18x.1.00	Yes

NOTE

Fan module and power supplies must be ordered separately. Air flow direction of the fan module and power supplies must be the same. AC and DC power supplies cannot be mixed in a system. Rack mount rails are included.

The following table list the SLX 9030 Switch supported Rack Mount Kits.

NOTE

XEN-R000296 and XEN-R000294 can also be used with SLX fixed, however, the box includes XBR-R000297 at shipment.

TABLE 5 Supported SLX 9030 Switch Rack Mount Kits

Part number	Description
XEN-R000294	Universal two-post mid-mount or flush-mount rack kit
XEN-R000296	Universal four-post fixed rack mount kit
XBR-R000297	Universal four-post flush-mount rack kit

What is new in this document

This is an update of the previous release of this document.

Device Overview

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ExtremeSwitching SLX 9030 platform introduction

The ExtremeSwitching SLX 9030 platform are high-performance 48-port 10GbE leaf switch that comes in two switch models, the SLX 9030-48S and the SLX 9030-48T with high-performance, nonblocking network switching chipset supporting up to 880 Gbps.

The SLX 9030 delivers agility at all layers of the data center stack, with feature highlights as follows:

- For the SLX-9030-48S: 48x10G/1G (SFP+) + 4x100G/40G (QSFP+)
- For the SLX-9030-48T: 48x10G/1G/100M (RJ-45) + 4x100G/40G (QSFP+)

Both switches support a console port (RS-232 in RJ-45, 115200 bps) and a management interface (RJ-45 100/1000 Mbps).

NOTE

25 Gb is supported with a breakout cable.

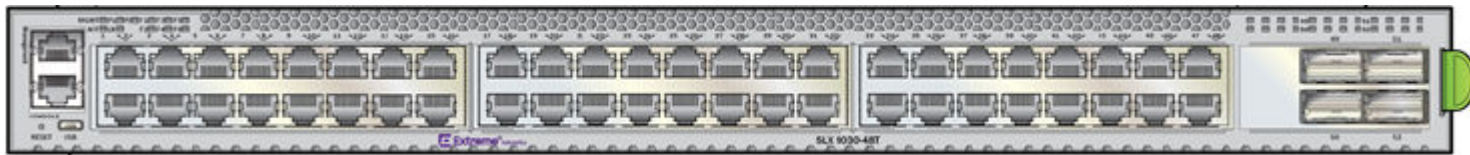
Hardware features

TABLE 6 ExtremeSwitching SLX 9030-48S and SLX 9030-48T switch features

Feature	Description
Maximum 1/10-Gb SFP+ (SLX 9030) or 1-Gb/10GBASE-T (SLX 9030-T) ports	48
40/100-Gb interfaces	4
Switch fabric capacity	Up to 880 Gbps
Forwarding capacity	720 Mbps
Airflow	Front to back or back to front (orderable option)
Fan module slots	6 (5+1 redundancy)
Maximum AC power supply rating	770/1100 W
Power supply module slots	2 (1+1 redundancy)
Height	1.7 in./4.30 cm/1 RU
Width	17.4 in./44.1 cm
Depth chassis only without cable management or fan handles	19.2 in./48.8 cm
Weight chassis only	19.84 lb/9.00 kg

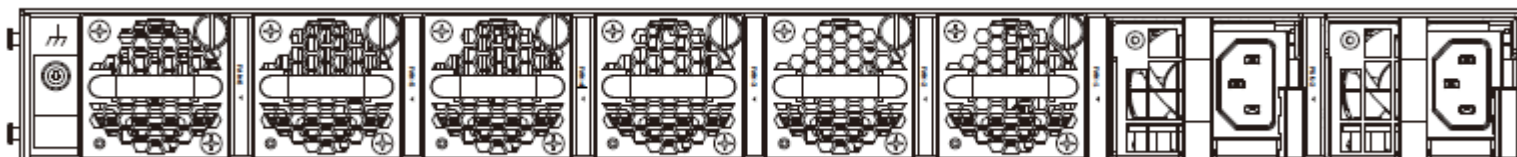
The following shows the front view of the SLX 9030-48S switch.

SLX 9030-48S device front view



The following shows the rear view of the SLX 9030-48S or SLX 9030-48T switch.

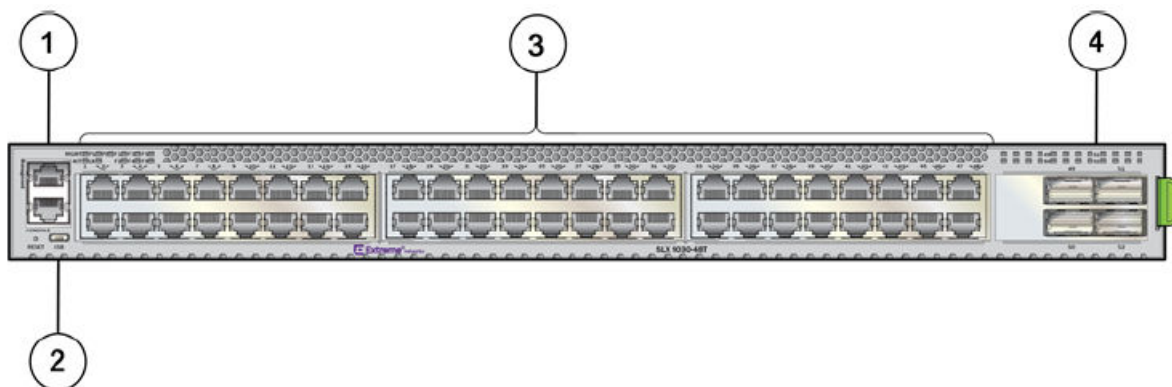
SLX 9030 device rear view



Port-side view of the SLX 9030 series switches

The following illustration shows the port-side view of the SLX 9030 series switches.

FIGURE 1 Port-side view

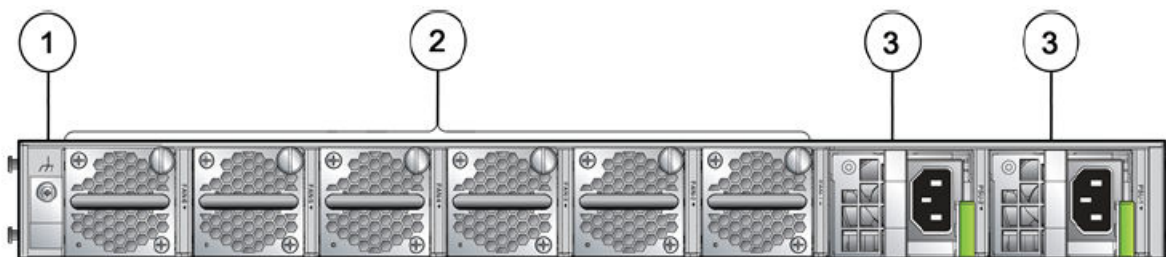


- | | |
|----------------------------|---|
| 1. Console/management port | 3. 1-Gb/10GBASE-T ports (48T model), or 1-Gb/10-Gb SFP+ ports (48S model) |
| 2. USB port | 4. 10Gb/25Gb/40Gb/100Gb capable QSFP28 ports |

Nonport-side view of the SLX 9030 series switches

The following illustration shows the rear (nonport) side of the SLX 9030 series switches.

FIGURE 2 Nonport-side view



1. Grounding lug
2. Fan modules
3. AC power input connectors

Device management options

You can use the management functions built into the device to monitor the port status, physical status, and other information to help you analyze device performance and to accelerate system debugging. The device automatically performs a power-on self-test (POST) each time it is turned on.

You can manage the device using any of the management options listed in the following table.

TABLE 7 Management options for the device

Management tool	Out-of-band support	In-band support	Reference documents
Command line interface (CLI)	Ethernet or serial connection	N/A	<i>ExtremeSwitching SLX-OS Management Configuration Guide</i>
REST or NETCONF/YANG APIs.	Ethernet connection	Yes	<i>ExtremeSwitching SLX-OS Management Configuration Guide</i>
Standard SNMP applications	Ethernet or serial connection	N/A	<i>ExtremeSwitching SLX-OS Management Configuration Guide</i>

Management commands

This section presents examples of the CLI used to manage ports and verify configurations.

Port management commands

Enabling/disabling ports:

```
device# configure
Entering configuration mode terminal
SLX(config)# interface Ethernet 0/12
SLX(conf-if-eth-0/12)# shutdown
2018/08/06-17:12:25, [NSM-1020], 1224, DCE, INFO, SLX, interface Ethernet 0/12 is administratively down.
2018/08/06-17:12:25, [NSM-1003], 1225, DCE, INFO, SLX, interface Ethernet 0/12 is link down.
SLX(conf-if-eth-0/12)# no shutdown
2018/08/06-17:12:39, [NSM-1019], 1229, DCE, INFO, SLX, interface Ethernet 0/12 is administratively up.
2018/08/06-17:12:42, [NSM-1001], 1232, DCE, INFO, SLX, interface Ethernet 0/12 is online.
```

Media auto-detect:

NOTE

The default is Auto Mode, but the user can override the default speed. (Mismatched speed configuration causes the link to be disabled and a RASLog message to be sent.

```
device# show interface ethernet 0/51
  Ethernet 0/51 is admin down, line protocol is down (admin down)
  :
  Pluggable media present
  Interface index (ifindex) is 201744640 (0xc066100)
  MTU 1548 bytes
  IP MTU 1500 bytes
  Maximum Speed      : 100G
  LineSpeed Actual   : Nil
  LineSpeed Configured : Auto-Detect, Duplex: Full
```

Configuring port speed:

```
device(conf-if-eth-0/51)# speed
Possible completions:
 40000    40Gbps
100000    100Gbps
 auto     Auto Detection (default)
SLX(conf-if-eth-0/51)# speed 40000
```

Configuring breakout mode:

```
device# configure
Entering configuration mode terminal
SLX(config)# hardware
SLX(config-hardware)# connector 0/50
SLX(config-connector-0/50)# breakout mode
Possible completions:
 4x10g    breakout 4x10G mode
 4x25g    breakout 4x25G mode
```

- Breakout port in 10G mode (with 100G or 40G optic media):

```
device(config-connector-0/49)# breakout mode 4x10g

%Warning: connector mode change is a disruptive command.
Please save the running-config to startup-config and reload the switch or power-cycle linecard for
the changes to take effect.
```

- Breakout port in 25G mode (with 100G optic media):

```
SLX(config-connector-0/50)# breakout mode 4x25g

%Warning: connector mode change is a disruptive command.
Please save the running-config to startup-config and reload the switch or power-cycle linecard for
the changes to take effect.
```

Confirming breakout mode:

```
device# show ip int br | i 52
Ethernet 0/52:1    unassigned    default-vrf    administratively down    down
Ethernet 0/52:2    unassigned    default-vrf    administratively down    down
Ethernet 0/52:3    unassigned    default-vrf    administratively down    down
Ethernet 0/52:4    unassigned    default-vrf    administratively down    down
```

Confirming interface configuration:

- device# show interface ethernet 0/52


```
Ethernet 0/52 is admin down, line protocol is down (admin down)
      :
      100G Interface
      LineSpeed Actual      : Nil
      LineSpeed Configured : 100000 Mbit, Duplex: Full
      :
```



```
FEC Mode - Disabled
:
```

```
device# show ip interface brief
Interface                IP-Address          Vrf                  Status                Protocol
=====                =
Ethernet 0/1             unassigned          default-vrf          administratively down  down
Ethernet 0/2             unassigned          default-vrf          administratively down  down
:
Ethernet 0/51:1          unassigned          default-vrf          administratively down  down
Ethernet 0/51:2          unassigned          default-vrf          administratively down  down
Ethernet 0/51:3          unassigned          default-vrf          administratively down  down
Ethernet 0/51:4          unassigned          default-vrf          administratively down  down
Ethernet 0/52            unassigned          default-vrf          administratively down  down
```

Enabling FEC

Port FEC mode is supported only on 100G ports. FEC is disabled on 1/10/40-G Speeds (including breakout ports). Link peers must be in the same FEC mode (RS-FEC). The FEC configuration is applied once speed change is initiated.

```
device(conf-if-eth-0/52)# fec mode
Possible completions:
  RS-FEC          Set FEC mode to RS-FEC in manual mode
  disabled        Set FEC disabled
device(conf-if-eth-0/52)# fec mode disabled
```

Verifying media

Verifying media on an SLX 9030-48S:

```
SLX# show media
Interface Ethernet 0/1
Identifier 3 SFP
Connector 7 LC
Transceiver 0000000000000010 10_GB/s
Name sw
Encoding 6
Baud Rate 103 (units 100 megabaud)
Length 9u 0 (units km)
Length 9u 0 (units 100 meters)
Length 50u 8 (units 10 meters)
Length 62.5u 3 (units 10 meters)
Length Cu 0 (units 1 meter)
Vendor Name Extreme
Vendor OUI 00:05:1e
Vendor PN 57-0000075-01 (10GE SR SFP+)
Vendor Rev A
Wavelength 850 (units nm)
Options 001a
BR Max 0
BR Min 0
Serial No AAA210503534952
Date Code 101219
Optical Monitor Yes
Temperature 24 Centigrade
Voltage 3317.2 (mVolts)
Current 0.002 (mAmps)
TX Power 0.1 (uWatts) / -40.000 (dBm)
RX Power 0.1 (uWatts) / -40.000 (dBm)
```

Verifying media on an SLX 9030-48T:

```
SLX# show media
Interface      Ethernet 0/1
Identifier     2      On-board
Connector      34     CAT-5 copper cable
Transceiver    10G    BASE-T Gigabit Ethernet
Name           cu
Encoding       5      IEEE 802.3ab
Length         max 100 m
Vendor Name    EXTREME
Vendor OUI     00:1b:e9
```

Verifying hardware profiles

TCAM, LAG, Counter, Route, and CAM Share are profiles that are supported on the SLX 9030 series. Only default settings of hardware profiles are supported. The following example shows a hardware profile.

```
device# show hardware profile current
switch type: EN-SLX-9030-48S
          current TCAM profile:  DEFAULT
                                12-acl:  2038
                                13v4-acl: 6134
                                13v6-acl: 6134
                                13v4-acl-vxlan: 0
                                12L3v4Of: 0
                                egr12-acl: 2038
                                egr13-acl: 2038
                                13v6-of: 0
                                Flex-acl: 0
current SLX ROUTE profile:  ROUTE-DEFAULT
                                hwopt:  Disabled
                                v4FibComp: Disabled
                                v6FibComp: Disabled
-----
          current LAG profile:  LAG-DEFAULT
                                max-lag:  64
-----
          current COUNTERS profile:  COUNTERS-DEFAULT
                                InLIF - HitCount: 32768
                                InL4 - HitCount: 16384
                                OutLIF - HitCount: 16384
                                OutL4 - HitCount: 0
```

System controls

There are six fan trays, and all six must be installed for the device to operate normally. The device can be operated with fewer than six fans, but a RASLog error message (HIL-1404) is issued.

ATTENTION

The airflow direction must be the same for the fans and power supply units (PSUs). Otherwise, mismatched fans are disabled and a RASLog error message is issued.

Preparing for the Installation

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Safety precautions

When using this product, observe all danger, caution, and attention notices in this manual. The safety notices are accompanied by symbols that represent the severity of the safety condition

When using this product, observe all danger, caution, and attention notices in this manual. The safety notices are accompanied by symbols that represent the severity of the safety condition.

Refer to Cautions and Danger Notices at the end of this guide for translations of safety notices for this product.

General precautions



DANGER

The procedures in this manual are for qualified service personnel.



DANGER

Before beginning the installation, see the precautions in "Power precautions."



DANGER

Be careful not to accidentally insert your fingers into the fan tray while removing it from the chassis. The fan may still be spinning at a high speed.



CAUTION

Changes or modifications made to this device that are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



CAUTION

Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.



CAUTION

Make sure the airflow around the front, and back of the device is not restricted.



CAUTION

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."



CAUTION

To protect the serial port from damage, keep the cover on the port when not in use.



CAUTION
Never leave tools inside the chassis.



CAUTION
If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.



CAUTION
Use the screws specified in the procedure. Using longer screws can damage the device.



CAUTION
Do not install the device in an environment where the operating ambient temperature might exceed 50°C (122°F).



DANGER
Batteries used for RTC/NVRAM backup are not located in operator-access areas. There is a risk of explosion if a battery is replaced by an incorrect type. Dispose of used components with batteries according to local ordinance and regulations.

ESD precautions



DANGER
For safety reasons, the ESD wrist strap should contain a series 1 megaohm resistor.



CAUTION
Static electricity can damage the chassis and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.



CAUTION
Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

Power precautions



DANGER
If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.



DANGER
Disconnect the power cord from all power sources to completely remove power from the device.



DANGER
This device might have more than one power cord. To reduce the risk of electric shock, disconnect all power cords before servicing.



DANGER
To avoid high voltage shock, do not open the device while the power is on.

**CAUTION**

Use a separate branch circuit for each power cord, which provides redundancy in case one of the circuits fails.

**CAUTION**

Ensure that the device does not overload the power circuits, wiring, and over-current protection. To determine the possibility of overloading the supply circuits, add the ampere (amp) ratings of all devices installed on the same circuit as the device. Compare this total with the rating limit for the circuit. The maximum ampere ratings are usually printed on the devices near the input power connectors.

Lifting precautions

**DANGER**

Use safe lifting practices when moving the product.

**DANGER**

Mount the devices you install in a rack as low as possible. Place the heaviest device at the bottom and progressively place lighter devices above.

**DANGER**

Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.

**CAUTION**

To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

Laser precautions

**DANGER**

All fiber-optic interfaces use Class 1 lasers.

**DANGER**

Laser Radiation. Do Not View Directly with Optical Instruments. Class 1M Laser Products.

**DANGER**

Use only optical transceivers that are qualified by Extreme Networks, Inc. and comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I, and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

Facility requirements

To install and operate the device successfully, ensure compliance with the following facility requirements.

Electrical considerations

For successful installation and operation of the device, ensure that the following electrical requirements are met:

- The primary outlet is correctly wired, protected by a circuit breaker, and grounded in accordance with local electrical codes.

- The supply circuit, line fusing, and wire size are adequate, as specified by the electrical rating on the device nameplate.
- The power supply standards are met.

Environmental considerations

For successful installation and operation of the device, ensure that the following environmental requirements are met:

- Because the SLX 9030/9030-T Switch can be ordered with fans that move air either front to back or back to front, be sure to orient your switch with the airflow pattern of any other devices in the rack. All equipment in the rack should force air in the same direction to avoid intake of exhaust air.
- Some combinations of intake and exhaust airflow may not be compatible with your environment. Consult your fan assembly and power supply FRU kits to determine the correct configuration.
- The ambient air temperature does not exceed 50°C (122°F) while the switch is operating with front-to-back airflow, or 45°C (113°F) while the switch is operating with back-to-front airflow.

Location considerations

Before installing the device, plan its location and orientation relative to other devices and equipment. Devices can be mounted in a standard 19-inch equipment rack or on a flat horizontal surface.

The site should meet the following requirements:

- Maintain the operating environment as specified in “Environmental considerations” under the section [ExtremeSwitching SLX 9030 Technical Specifications](#) on page 97.
- For installation on a flat horizontal surface, the SLX 9030/9030T Switch should be installed with its top and bottom covers parallel to the floor. The SLX 9030/9030T Switch should not be installed upside down.
- Allow a minimum of 3 in. of space between the front and the back of the device and walls or other obstructions for proper airflow.
- Allow at least 3 in. of space at the front and back of the device for the twisted-pair, fiber-optic, and power cabling.
- Allow access space for installing, cabling, and maintaining the devices.
- Ensure the status LEDs are clearly visible.
- Allow for twisted-pair cables to be routed away from power lines, fluorescent lighting fixtures, and other sources of electrical interference, such as radios and transmitters.
- Allow for the unit to be connected to a separate grounded power outlet that provides 100 to 240 VAC, 50 to 60 Hz, is within 2 m (6.6 ft) of each device, and is powered from an independent circuit breaker. As with any equipment, a filter or surge suppressor is recommended.

Cable management recommendations

Cables can be organized and managed in a variety of ways; for example, use cable channels on the sides of the rack or patch panels to reduce the potential for tangling the cables. The following list provides some recommendations for cable management:

NOTE

Before plugging a cable to any port, be sure to discharge any static charge stored on the cable by touching the electrical contacts to ground surface.

- You should not use tie wraps with fiber-optic cables because they are easily overtightened and can damage the optical fibers. Velcro-like wraps are recommended.

- Plan for the rack space required for cable management before installing the device.
- Leave at least 1 m (3.28 ft) of slack for each port cable. This provides room to remove and replace the device, allows for inadvertent movement of the rack, and helps prevent the cables from being bent to less than the minimum bend radius.
- For easier maintenance, label the cables and record the devices to which they are connected.
- Keep LEDs visible by routing port cables and other cables away from the LEDs.

Quick installation checklist

This checklist provides a high-level overview of the basic installation process from the planning stage to the point where the device comes online and is ready to be deployed. Completing all the tasks in the suggested order ensures successful installation. Extreme Networks recommends that you print this checklist and take it to the installation site.

Follow the steps listed in the table "Installation prerequisites" below to install your device. Details for each of these steps are provided on the pages indicated.

TABLE 8 Installation prerequisites

Task number	Task	Task details or additional information	Completed
1	Ensure that the physical environment that will host the device has the proper cabling and ventilation.	Refer to Facility requirements on page 21 .	
2	If customizing an SLX 9030 platform <ol style="list-style-type: none"> 1. Install at least one power supply unit. 2. Install at least five fans. 	Refer to Inserting a new AC power supply on page 87. Refer to Inserting a new DC power supply on page 88 Refer to Inserting a new fan assembly on page 93	
3	Mount the device on a desktop or in a rack	Refer to Installing the device in a rack on page 26.	
4	Attach a terminal or PC to the device. This will enable you to configure the device through the command line interface (CLI).	Refer to Establishing a serial connection on page 57.	
5	Assign a password for additional access security. No default password is assigned to the CLI.	<i>Extreme SLX-OS Management Configuration Guide</i>	
6	Before attaching equipment to the device, you must configure an interface IP address to the subnet on which the device will be located. Initial IP address configuration is performed using the CLI with a direct serial connection.	<i>Extreme SLX-OS Management Configuration Guide</i>	
7	Connect an Ethernet connection to the system.	Refer to Establishing an Ethernet connection on page 59.	
8	Test IP connectivity to other devices by pinging them and tracing routes.	<i>Extreme SLX-OS Management Configuration Guide</i>	
9	Continue configuring the device using the CLI.	<i>Extreme SLX-OS Management Configuration Guide</i>	
10	Secure access to the device.	<i>Extreme SLX-OS Management Configuration Guide</i>	

Shipping carton contents

When unpacking the device, verify that the contents of the shipping carton is complete. Save the shipping carton and packaging in the event you need to return the shipment.

- The SLX 9030/9030-T Switch comes with an accessory kit containing the following items:
 - XBR-R000297 four-post rack mount kit
 - Serial cable with an RJ-45 connector
 - Two 6-ft. power cord
 - Power cord retainer clip
 - Rubber feet, required for setting up the device as a standalone unit China-RoHS Hazardous/Toxic Substance statement
 - EULA/Read-Me document
 - USB drive, 8G

Mounting the Device

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- Mounting precautions.....25
- Standalone installation.....26
- Installing the device in a rack.....26
- Four-post rack mount kit installation (XBR-R000297).....27
- Installing the Universal Two-Post Rack Kit (XEN-R000294).....31
- Installing the Universal Four-Post Rack Kit (XEN-R000296).....41

Mounting options

You can install the device in several ways:

- As a standalone unit on a flat surface, for example a desk top. Use the rubber feet included with the shipment to secure the device on the surface. No other equipment is required for desktop installation.
- In a four-post EIA rack using the flush-mount rack kit (XBR-R000297) included with the switch. The rack kit can be used to install devices in EIA racks that are between 46 cm and 79 cm (18 to 31 in.) deep.
- In a two-post Telco rack using the Universal Two-Post Rack Kit (XEN-R000294).. The two-post rack kit supports various mounting positions.
- In a four-post EIA rack using the Universal Four-Post Rack Kit (XEN-R000296). The rack kit can be used to install devices in EIA racks that are between L-13.7 to 81.28 cm deep (L-5.0 to 32.0 in.), where L is the chassis depth.

NOTE

Review the [Safety precautions](#) on page 19 before mounting the device.

NOTE

These rack mount kits are supported for this device at the date of this publication. For the latest support information, contact your Extreme Networks representative.

Mounting precautions

The following precautions specifically apply to mounting the device.



DANGER

Use safe lifting practices when moving the product.



DANGER

Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.



CAUTION

Make sure the airflow around the front, and back of the device is not restricted.



CAUTION

Never leave tools inside the chassis.



CAUTION

Use the screws specified in the procedure. Using longer screws can damage the device.



CAUTION

Do not install the device in an environment where the operating ambient temperature might exceed 50°C (122°F).

Standalone installation

Complete the following steps to install the device as a standalone unit on a table top.

1. Unpack the device and verify the items listed under "Items included with this device" are present and undamaged.
2. Apply the adhesive rubber feet to the device. The rubber feet help prevent the device from sliding off the supporting surface.
 - a) Clean the indentations at each corner of the bottom of the device to ensure that they are free of dust or other debris that might lessen the adhesion of the feet.
 - b) With the adhesive side against the chassis, place one rubber foot in each indentation and press into place.
3. Place the device on a flat, sturdy surface.
4. Provide power to the device as described under "Providing power to the device."

NOTE

Do not connect the device to the network until the IP address is correctly set. For instructions on how to set the IP address, refer to "Configuring the device IP address."

Installing the device in a rack



DANGER

Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.

NOTE

You need a #2 Phillips screwdriver for installation.

Before mounting the device in a rack, pay particular attention to the following factors:

- **Temperature:** Because the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range. (Refer to [Facility requirements](#) on page 21 .
- **Mechanical loading:** Do not place any equipment on top of a rack-mounted unit.
- **Circuit overloading:** Be sure that the supply circuit to the rack assembly is not overloaded.
- **Grounding:** Rack-mounted equipment should be properly grounded. Particular attention should be given to supply connections other than direct connections to the mains electricity supply.

To mount the product into a two-post rack, you can order the two-post rack kit with the part number XEN-R000294. For the procedure to install this kit, refer to "Installing the Universal Two-Post Rack Kit (XEN-R000294)" .

To mount the product into a four-post rack, you can also order the four-post rack kit with the part number XEN-R000296. For the procedure to install this kit, refer to "Installing the Universal Four-Post Rack Kit (XEN-R000296)" on page 41.

To mount the product into a four-post rack using the included rack-mount kit, refer to “Four-post rack mount installation (XBR-R000297)” on page 27 for the installation procedure.

Four-post rack mount kit installation (XBR-R000297)

Use the following instructions to install the SLX 9030 or the SLX 9030-T Switch in EIA racks that are between 46 cm and 79 cm (18 to 31 in.) using the four-post flush-mount rack kit included with the switch.

Time and items required

Allow 15 to 30 minutes to complete the installation.

The following items are required to install the device using the Universal Four-Post Rack Kit:

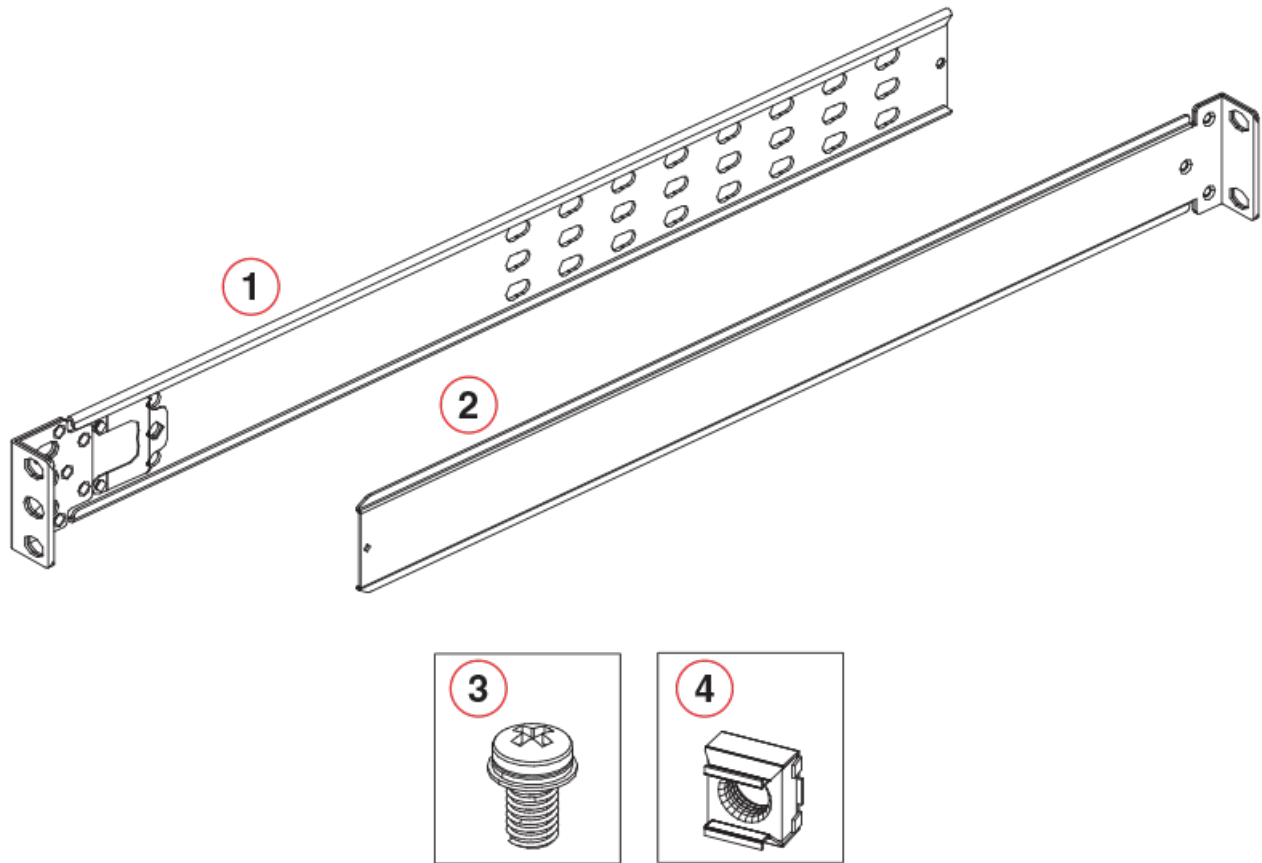
- #2 Phillips torque screwdriver
- 1/4-inch slotted-blade torque screwdriver

Parts list

The following parts are provided with the four-post flush-mount rack kit (XBR-R000297).

Verify that the items below are included in the parts list.

FIGURE 3 Items in the four-post flush-mount rack kit



1. Front brackets (2)
2. Rear brackets, long (2)
3. Screw, 10-32 x 5/8-in., panhead Phillips (12)
4. Retainer nut, 10-32 (12)

Ensure that the items listed and illustrated in Figure 3 are included in the kit.



CAUTION

Use the screws specified in the procedure. Using longer screws can damage the device.

Flush-front mounting



CAUTION

The device must be turned off and disconnected from the fabric during this procedure.

Complete the following tasks to install the device in a four-post rack.

1. [Attaching the front brackets](#) on page 29.
2. [Installing the device in the rack](#) on page 29.

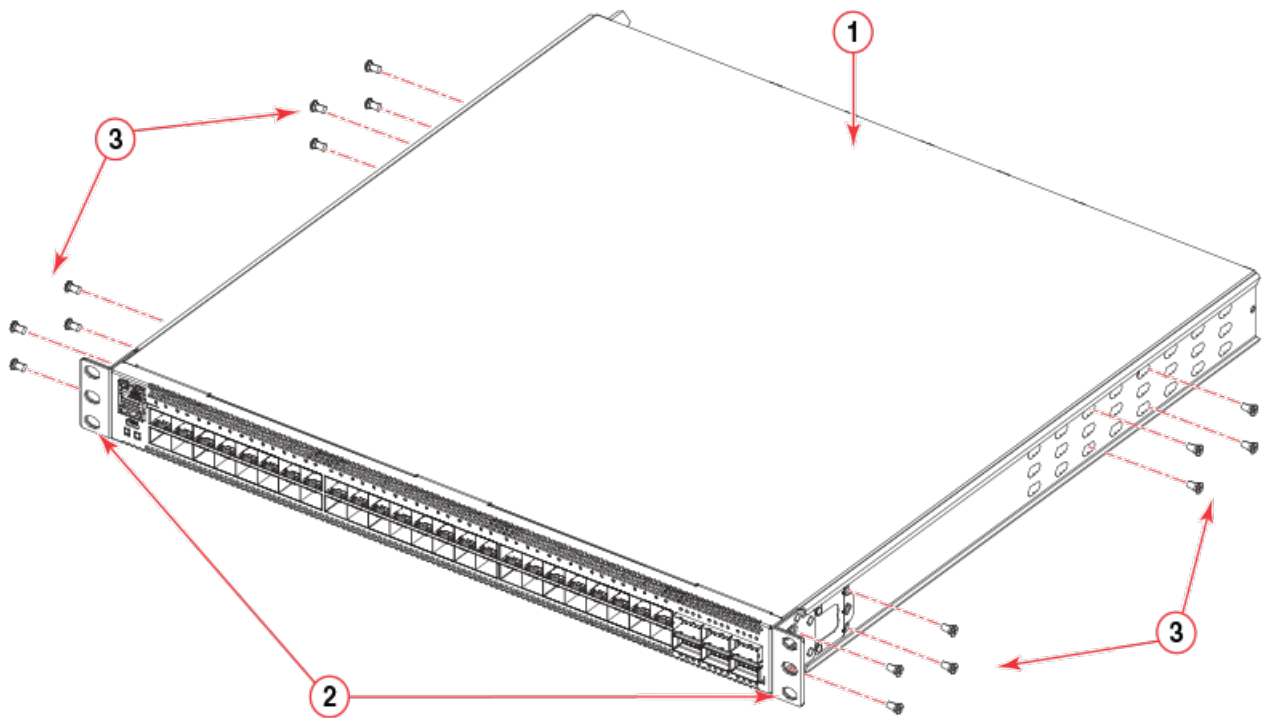
3. [Attaching the rear brackets to the rack posts](#) on page 30 .

Attaching the front brackets

Complete the following steps to attach the front brackets to the device.

1. Position the right front bracket with the flat side against the right side of the device at the front of the device, as shown in the figure below.
2. Use the six pre-installed 8-32 x 5/16-in. flathead screws to attach the bracket to the side of the device.
3. Repeat step 1 and step 2 to attach the left front bracket to the left side of the device.
4. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 4 Attaching the front brackets to the device



1. The SLX device
2. Front brackets
3. Screws, 8-32 x 5/16-in., flathead Phillips

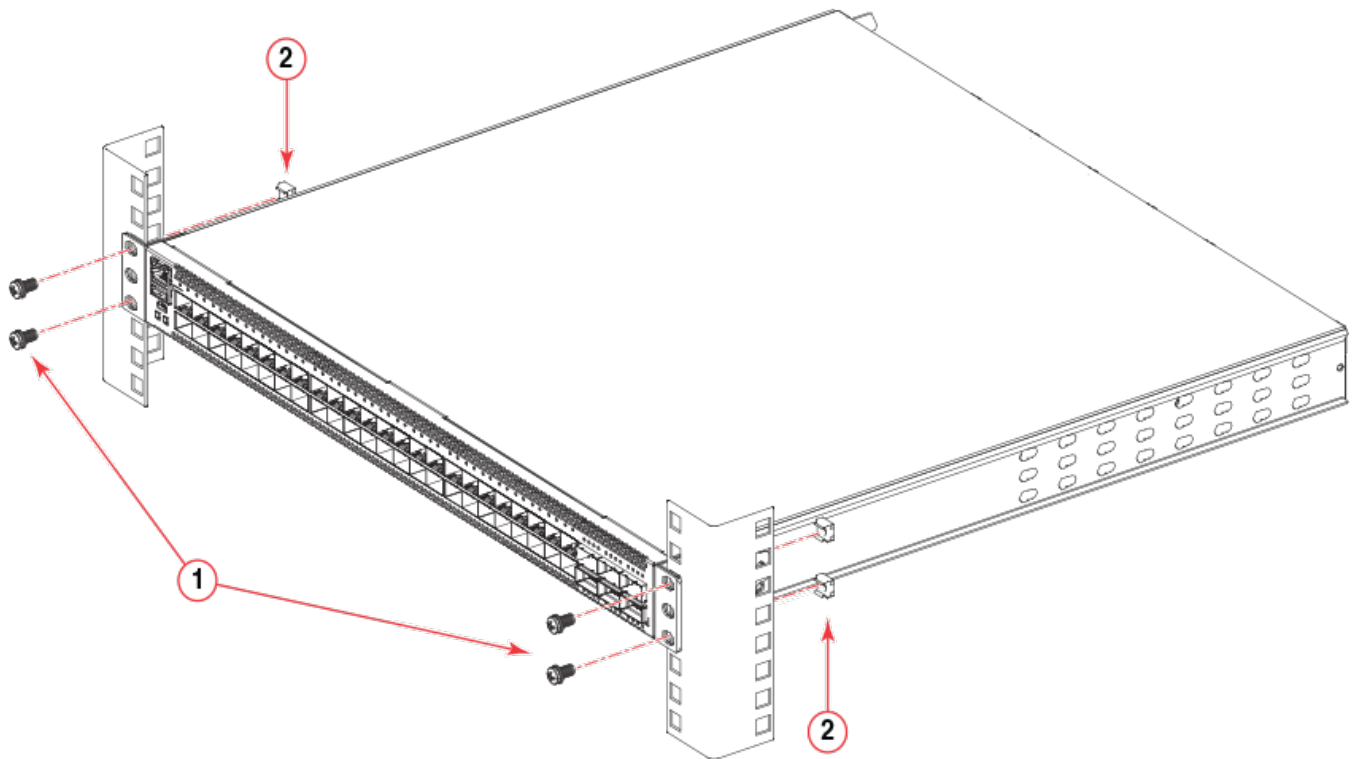
Installing the device in the rack

Complete the following steps to install the device in the rack.

1. Position the device in the rack, as shown in the figure below, providing temporary support under the device until the rail kit is secured to the rack.
2. Attach the right front bracket to the right front rack post using three 10-32 x 5/8-in. panhead screws and three retainer nuts. Use the three holes in the bracket.

3. Attach the left front bracket to the left front rack post using three 10-32 x 5/8-in. panhead screws and three retainer nuts. Use the three holes in the bracket.
4. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 5 Installing the device in the rack



1. Screws, 10-32 x 5/8-in., panhead Phillips

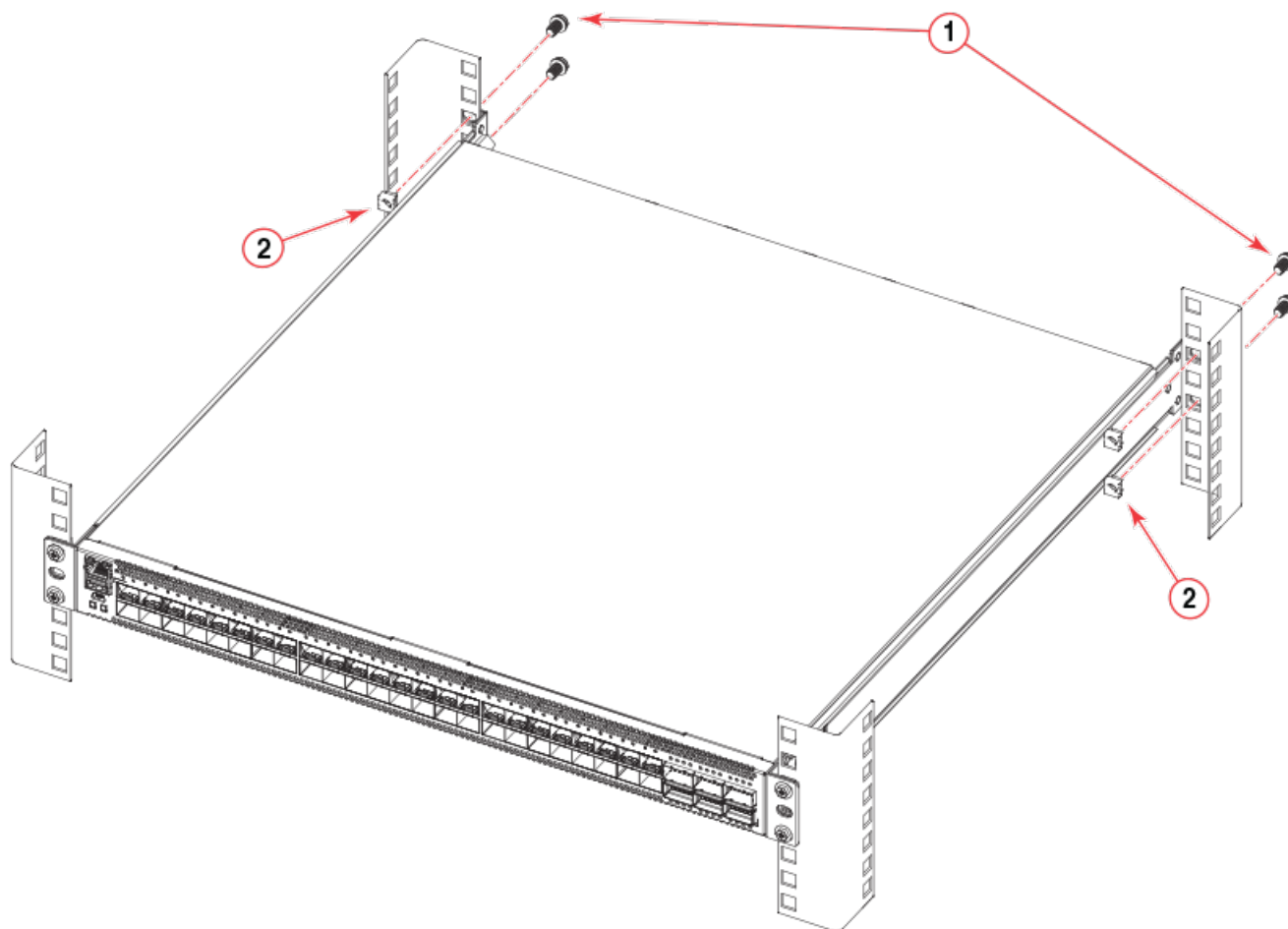
2. Retainer nuts, 10-32

Attaching the rear brackets to the rack posts

Complete the following steps to attach the rear brackets to the rack posts.

1. Slide the right rear bracket into the right front bracket and the left rear bracket into the left front bracket.
2. Adjust the rear brackets to the rack depth.
3. Attach the right rear bracket to the right rear rack post using three 10-32 x 5/8-in. panhead screws and three retainer nuts, as shown in the figure below. Use the three holes in the bracket.
4. Attach the left rear bracket to the left rear rack post using three 10-32 x 5/8-in. panhead screws and three retainer nuts. Use the three holes in the bracket.
5. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 6 Attaching the rear brackets to the rack posts



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

Installing the Universal Two-Post Rack Kit (XEN-R000294)

Use the following instructions to install an Extreme Networks 1U or 2U device in a two-post telecommunications (Telco) rack using the Universal Two-Post Rack Kit (XEN-R000294).

There are two ways you can mount the device in a two-post rack:

- With the port side flush with the front posts
- With the posts mounted to the mid-section of the device

Observe the following when mounting this device:

- Two people are required to install the device in a rack. One person should hold the device, while the other screws in the front and rear brackets
- Before mounting your device, review any specific installation and facility requirements in the Hardware Installation Guide for the device.

- Hardware devices illustrated in these procedures are only for reference and may not depict the device you are installing in the rack.

Installation requirements

Review the installation and facility requirements for your product before mounting the device . Refer to the hardware installation guide for your product for more information.

Lifting requirements

For 1U and 2U devices, two people are required to install the device in a rack. One person holds the device, while the other screws in the front and rear "L" brackets.

Time and items required

Allow 15 to 30 minutes to complete the installation.

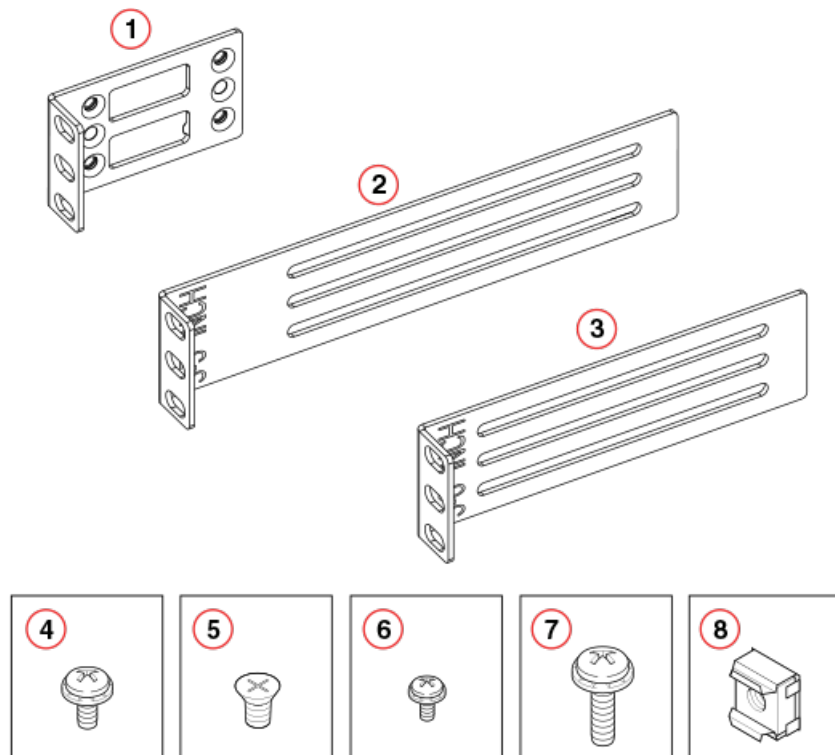
The following items are required to install the device using the Universal Two-Post Rack Kit:

- #2 Phillips torque screwdriver
- 1/4-inch slotted-blade torque screwdriver

Parts list

The following parts are provided with the Universal Two-Post Rack Kit (XEN-R000294).

FIGURE 7 XEN-R000294 Rack Parts list



1. Front brackets (2)
2. Rear brackets 5-6 inch post (2)
3. Rear brackets 3-5 inch post (2)
4. Screw, 8-32 x 5/16-in., panhead Phillips (8)
5. Screw, 8-32 x 5/16-in., flathead Phillips (16)
6. Screw, 6-32 x 1/4-in., panhead Phillips (8)
7. Screw, 10-32 x 5/8-in., panhead Phillips (8)
8. Retainer nut, 10-32 (8)

Ensure that the items listed and illustrated in Figure are included in the kit. Note that not all parts may be used with certain installations depending on the device type.

**CAUTION**

Use the screws specified in the procedure. Using longer screws can damage the device.

Flush-front mounting

Observe the following notes when using this procedure:

- The device must be turned off and disconnected from the fabric during this procedure.
- The illustrations in this document show a 1U device, but the instructions are the same for a 2U device.

- The illustrations for this procedure show a two-post rack with narrow posts (3- to 5-inch) as an example.
- The illustrations in the rack installation procedures are for reference only and may not show the actual device.

Complete the following tasks to install the device in a rack:

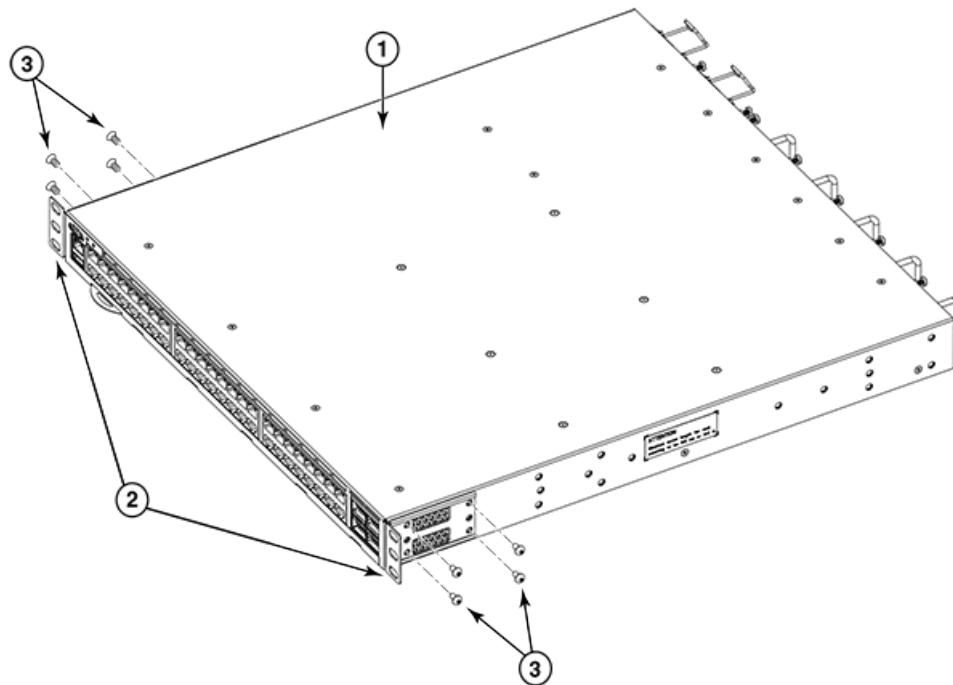
1. [Attaching the front brackets to the device](#) on page 34
2. [Attaching the front brackets to the rack](#) on page 35
3. [Attaching the rear brackets to the rack](#) on page 35
4. [Attaching the rear brackets to the device](#) on page 36

Attaching the front brackets to the device

Complete the following steps to attach the front brackets to the device.

1. Position the right front bracket with the flat side against the right side of the device, as shown in [Figure 8](#).
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat step 1 and step 2 to attach the left front bracket to the left side of the device.
4. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 8 Attaching the front brackets



1. The Extreme device
2. Front brackets, right and left

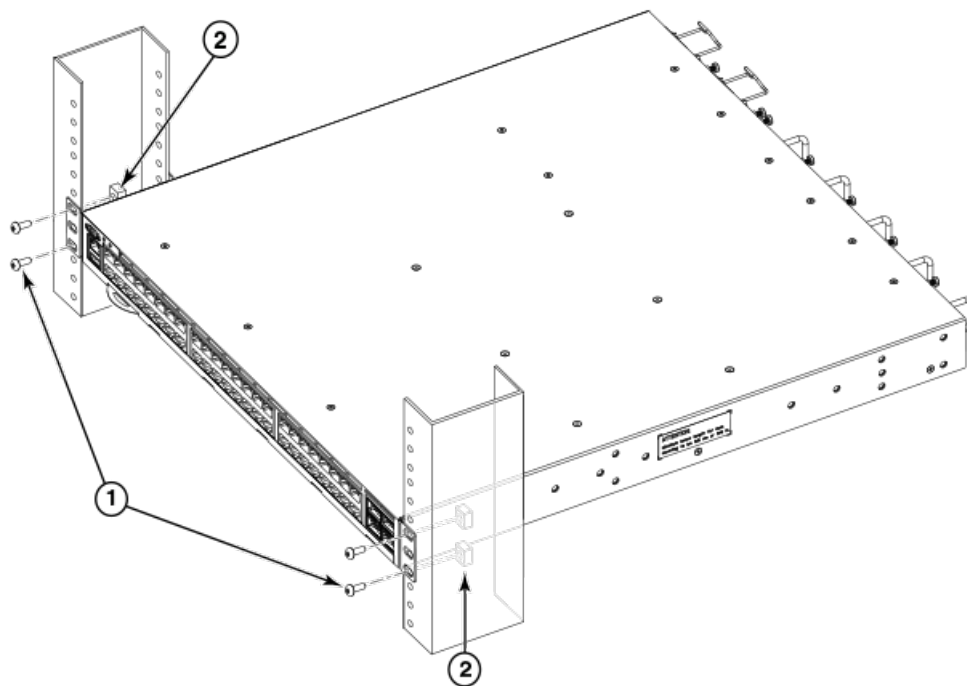
3. Screws, 8-32 x 5/16-in., flathead Phillips

Attaching the front brackets to the rack

Complete the following steps to install the device in the rack.

1. Position the device in the rack, as shown in (Figure 9), providing temporary support under the device until the rack kit is fully secured to the rack.
2. Attach the right front bracket to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
4. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb. (29 cm-kg).

FIGURE 9 Attaching front brackets to a rack



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

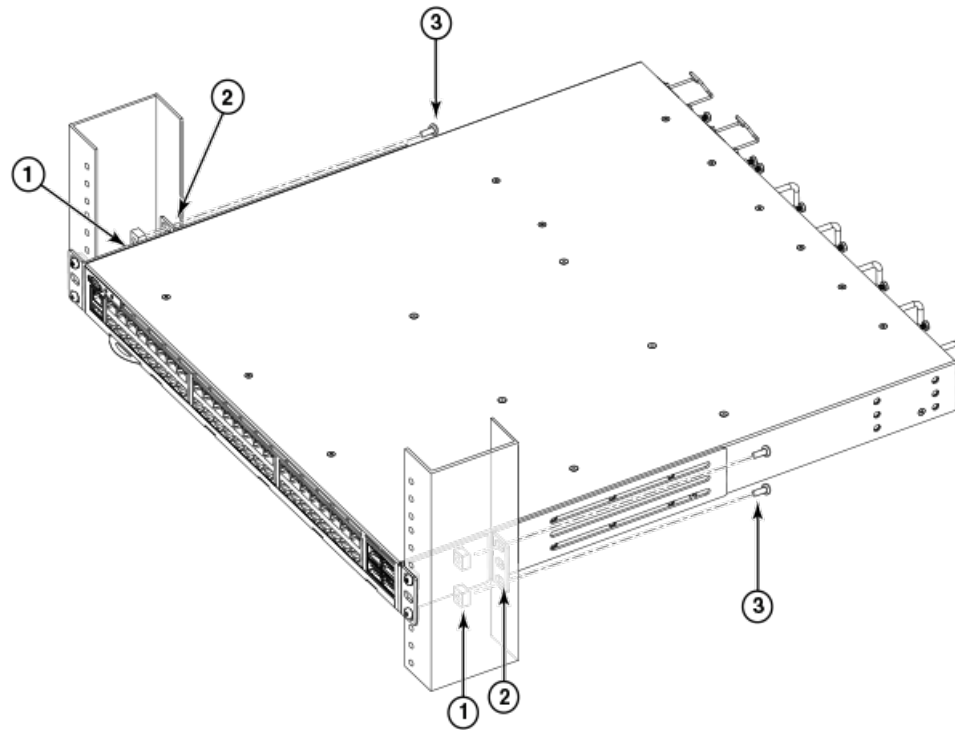
Attaching the rear brackets to the rack

Complete the following steps to attach the rear brackets to the rack.

1. Select the proper length bracket for your post width. If your posts are three to five inches wide, use the brackets marked 3-5 INCH. If your posts are five to six inches wide, use the brackets marked 5-6 INCH.
2. Position the right rear bracket in the right rear of the device, as shown in Figure 10.
3. Attach the bracket to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
4. Repeat step 2 and step 3 to attach the left rear bracket to the left rack upright.

5. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb. (29 cm-kg).

FIGURE 10 Attaching the rear brackets to a rack



1. Retainer nuts, 10-32
2. Rear brackets

3. Screws, 10-32 x 5/8-in., panhead Phillips

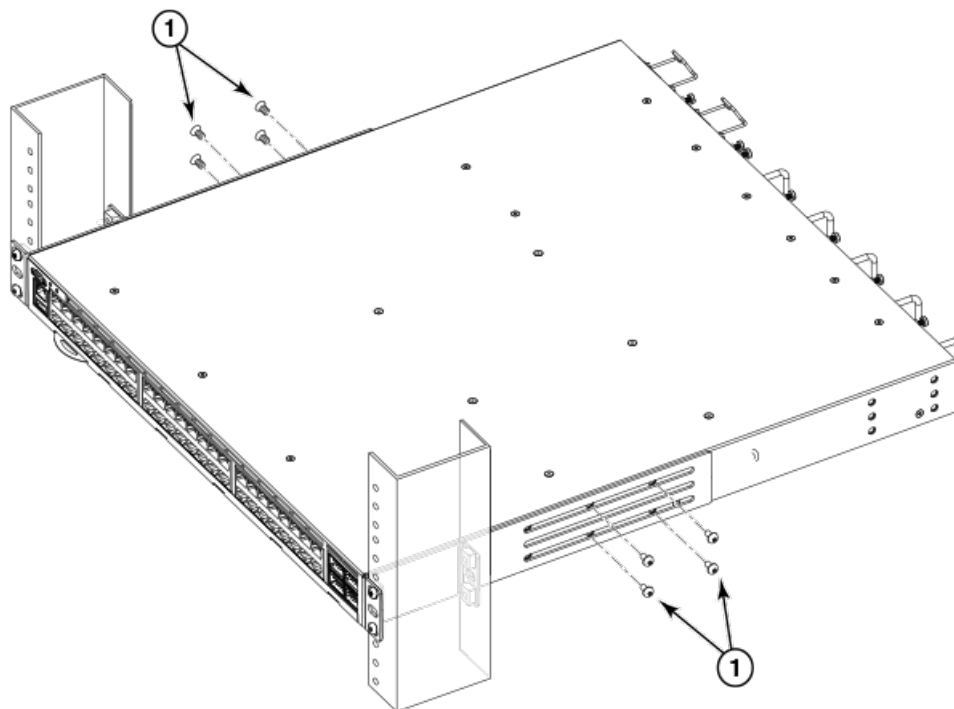
Attaching the rear brackets to the device

Complete the following steps to attach the rear brackets to the device.

1. Align the right rear bracket to the right rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device, as shown in [Figure 11](#). Be sure to insert the screws through the upper and lower slots in the bracket.
2. Align the left rear bracket to the left rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Again, use the upper and lower slots in the bracket.

3. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 11 Attaching the rear brackets to the device



1. Screws, 8-32 x 5/16-in., panhead Phillips

Mid-mounting

Observe the following notes when using this procedure:

- The device must be turned off and disconnected from the fabric during this procedure.
- The illustrations in this document show a 1U device, but the instructions are the same for a 2U device.
- The illustrations in the rack installation procedures are for reference only and may not show the actual device.

Complete the following tasks to install the device in a rack:

1. [Attaching the front brackets to the device](#) on page 37
2. [Attaching the front brackets to the rack](#) on page 38
3. [Attaching the rear brackets to the rack](#) on page 39
4. [Attaching the rear brackets to the device](#) on page 40

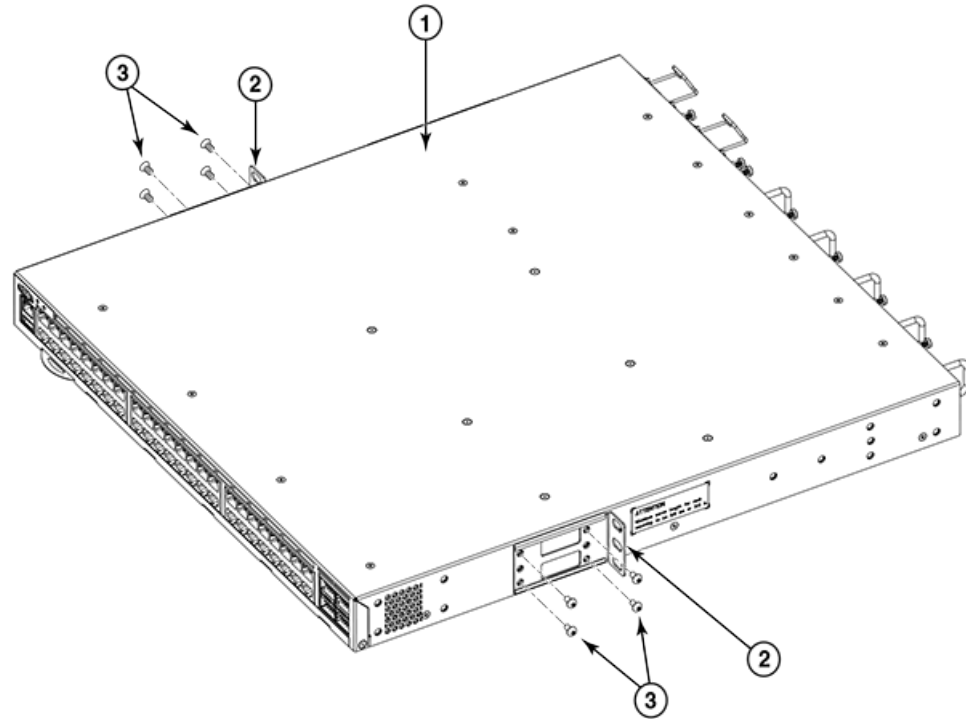
Attaching the front brackets to the device

Complete the following steps to attach the front brackets to the device.

1. Position the right front bracket with the flat side against the right side of the device, as shown in [Figure 12](#).

2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat step 1 and step 2 to attach the left front bracket to the left side of the device.
4. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 12 Attaching the front brackets



1. The Extreme device
2. Front brackets, right and left

3. Screws, 8-32 x 5/16-in., flathead Phillips

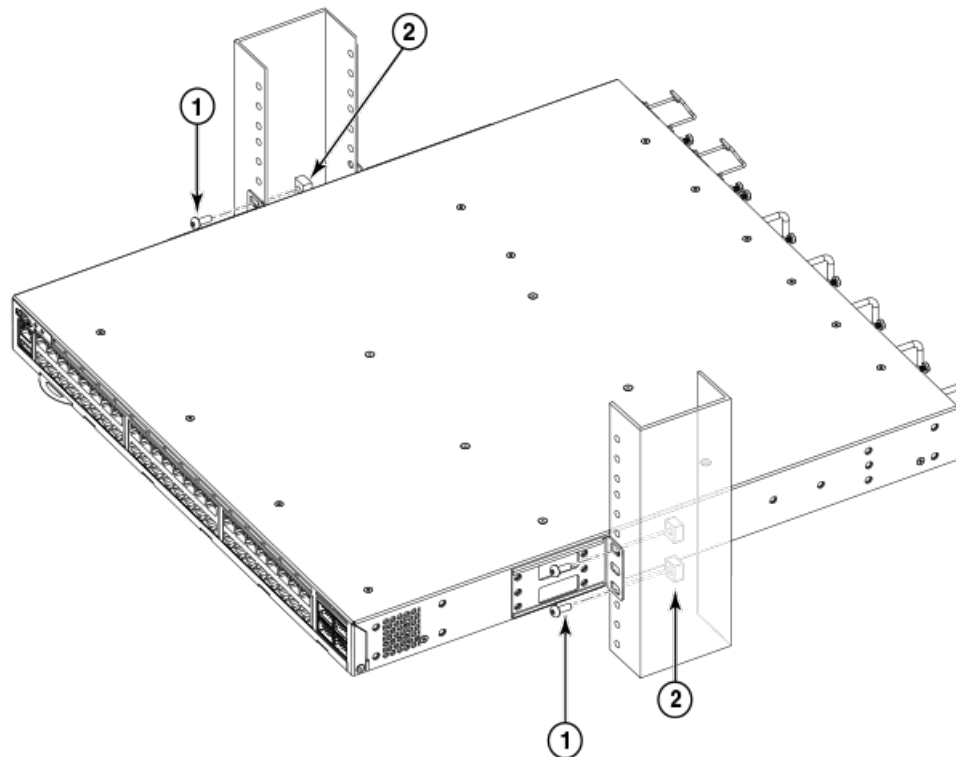
Attaching the front brackets to the rack

Complete the following steps to install the device in the rack.

1. Position the device in the rack, as shown in [Figure 13](#), providing temporary support under the device until the rack kit is fully secured to the rack.
2. Attach the right front bracket to the right rack upright using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left rack upright using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.

4. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 13 Attaching front brackets to a rack



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

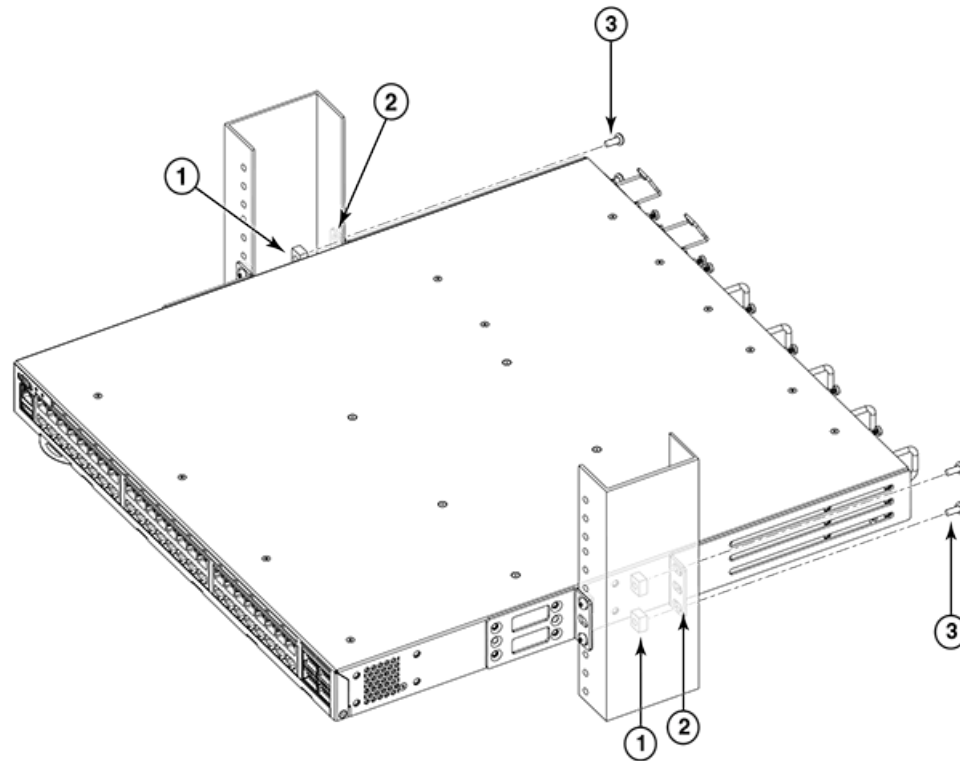
Attaching the rear brackets to the rack

Complete the following steps to attach the rear brackets to the rack.

1. Select the proper length bracket for your post width. If your posts are three to five inches wide, use the brackets marked 3-5 INCH. If your posts are five to six inches wide, use the brackets marked 5-6 INCH.
2. Position the right rear bracket in the right rear of the device, as shown in the following figure. Whether you are using the 3-5 inch or the 5-6 inch bracket, the rear end of the bracket will be flush with the back of the device.
3. Attach the brackets to the right rack upright using two 10-32 x 5/8-in. panhead screws and two retainer nuts.
4. Repeat step 2 and step 3 to attach the left rear bracket to the left rack upright.

5. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 14 Attaching the rear brackets to a rack



1. Retainer nuts, 10-32
2. Rear brackets (right and left)

3. Screws, 10-32 x 5/8-in., panhead Phillips

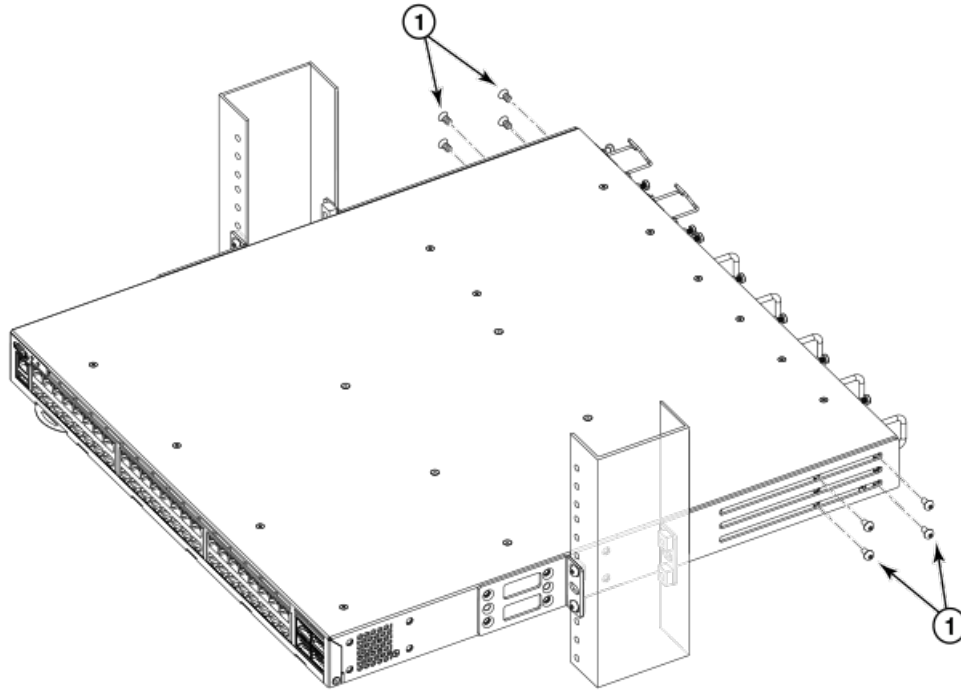
Attaching the rear brackets to the device

Complete the following steps to attach the rear brackets to the device.

1. Align the right rear bracket to the right rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device, as shown in [Figure 15](#). Be sure to insert the screws through the upper and lower slots in the bracket.
2. Align the left rear bracket to the left rear of the device and use four 8-32 x 5/16-in. panhead screws to attach the bracket to the device. Again, use the upper and lower slots in the bracket.

3. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 15 Attaching the rear brackets to the device



1. Screws, 8-32 x 5/16-in., panhead Phillips

Installing the Universal Four-Post Rack Kit (XEN-R000296)

Use the following instructions to install 1U and 2U devices in EIA racks that are between L-12.7 to 81.28 cm deep (L-5.0 to 32.0 in.), where L is the chassis depth, using the Universal Four-Post Rack Kit (XEN-R000296).

There are two ways you can mount the device in a four-post rack:

- With the port side flush with the front posts.
- With the nonport side flush with the rear posts in a recessed position. A recessed position allows a more gradual bend in the fiber-optic cables connected to the switch and less interference in the aisle at the front of the rack.

TABLE 9 Space requirements

Chassis with port-side side vents	Notes	Chassis depth	Minimum rack depth	Maximum rack depth
No	Applicable to port-side and nonport-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to port-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to nonport-side flush mounts.	L	L	81.28 cm (32 in.)

Note that if chassis depth (L) is less than 40.64 cm (16 in.), the chassis will not fit into a rack with a maximum depth of 81.28 cm (32 in.) using the universal four-post rack kit. The maximum rack depth for a chassis less than 40.64 cm (16 in.) is 81.28 cm (32 in.) minus the difference between the chassis depth and 40.64 cm (16 in.). For example, a chassis with a depth (L) of 35.56 cm (14 in.) is 5.08 cm (2 in.) smaller than 40.64 cm (16 in.), so it will install into a rack with a maximum depth of 81.28 cm (32 in.) - 5.08 cm (2 in.) = 76.2 cm (30 in.).

Observe the following when mounting this device:

- Two people are required to install the device in a rack. One person holds the device, while the other screws in the front and rear brackets.
- Before mounting your device, review any specific installation and facility requirements in this Hardware Installation Guide.
- Hardware devices illustrated in these procedures are only for reference and may not depict the device you are installing into the rack.

Installation requirements

Provide space in an EIA rack with the following minimum and maximum distances between the front and back posts.

NOTE

For 1U and 2U devices, two people are required to install the device in a rack. One person holds the device, while the other screws in the front and rear "L" brackets.

TABLE 10 Space requirements

Chassis with port-side side vents	Notes	Chassis depth	Minimum rack depth	Maximum rack depth
No	Applicable to port-side and nonport-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to port-side flush mounts.	L	L-12.7 cm (L-5 in.)	81.28 cm (32 in.)
Yes	Applicable to nonport-side flush mounts.	L	L	81.28 cm (32 in.)

Note that if chassis depth (L) is less than 40.64 cm (16 in.), the chassis will not fit into a rack with a maximum depth of 81.28 cm (32 in.) using the universal four-post rack kit. The maximum rack depth for a chassis less than 40.64 cm (16 in.) is 81.28 cm (32 in.) minus the difference between the chassis depth and 40.64 cm (16 in.). For example, a chassis with a depth (L) of 35.56 cm (14 in.) is 5.08 cm (2 in.) smaller than 40.64 cm (16 in.), so it will install into a rack with a maximum depth of 81.28 cm (32 in.) - 5.08 cm (2 in.) = 76.2 cm (30 in.).

Review the installation and facility requirements for your product before mounting the device. Refer to the *Hardware Installation Guide* for your product for more information.

Time and items required

Allow 15 to 30 minutes to complete the installation.

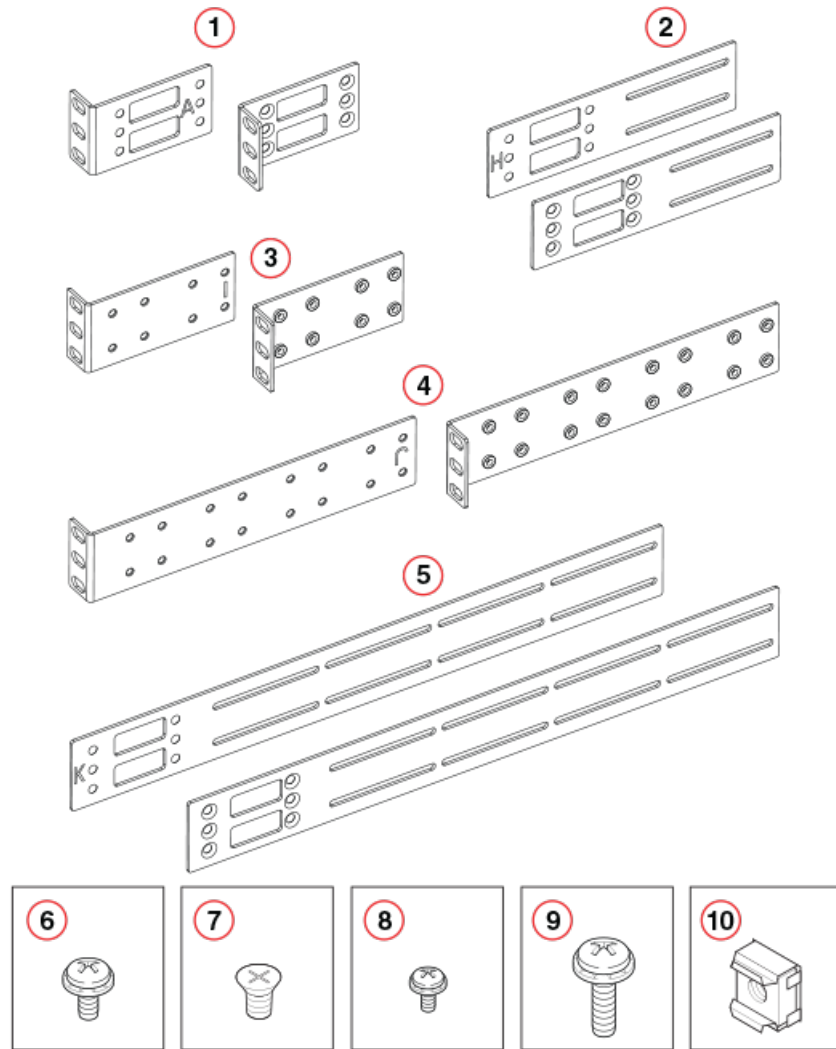
The following items are required to install the device using the Universal Four-Post Rack Kit:

- #2 Phillips torque screwdriver
- 1/4-inch slotted-blade torque screwdriver

Parts list

The following parts are provided with the Universal Four-Post Rack Kit (XEN-R000296).

FIGURE 16 XEN-R000296 Rack Parts list



1. Front brackets (2)
2. Extension brackets, medium (2)
3. Rear brackets, short (2)
4. Rear brackets, long (2)
5. Extension brackets, long (2)
6. Screw, 8-32 x 5/16-in., panhead Phillips (8)
7. Screw, 8-32 x 5/16-in., flathead Phillips (16)
8. Screw, 8-32 x 5/16-in., flathead Phillips (16)
9. Screw, 10-32 x 5/8-in., panhead Phillips (8)
10. Retainer nut, 10-32 (8)

Ensure that the items listed and illustrated in [Figure 16](#) are included in the kit. Note that not all parts may be used with certain installations depending on the device type.



CAUTION

Use the screws specified in the procedure. Using longer screws can damage the device.

Flush-front mounting



CAUTION

The device must be turned off and disconnected from the fabric during this procedure.

NOTE

The illustrations in the rack installation procedures are for reference only and may not show the device that you are installing.

Complete the following tasks to install the device in a four-post rack.

1. [Attaching the front brackets](#) on page 44
2. [Attaching the bracket extensions to the device](#) on page 45
3. [Installing the device in the rack](#) on page 46
4. [Attaching the rear brackets to the extensions](#) on page 47
5. [Attaching the rear brackets to the rack posts](#) on page 48

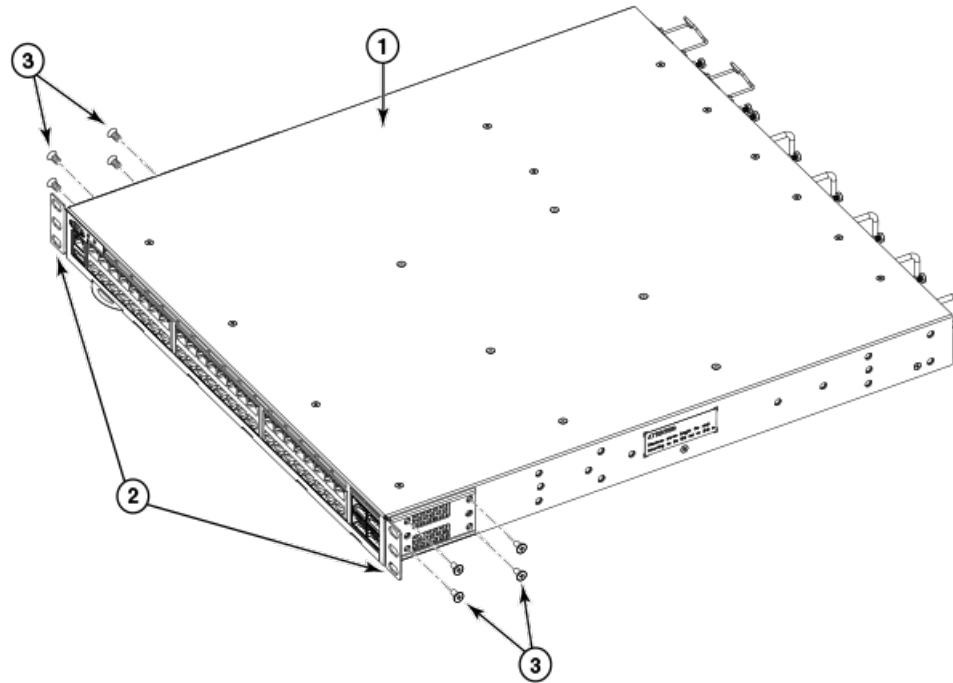
Attaching the front brackets

Complete the following steps to attach the front brackets to the device.

1. Position the right front bracket with the flat side against the right side of the device at the front of the device, as shown in [Figure 17](#).
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat step 1 and step 2 to attach the left front bracket to the left side of the device.

4. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 17 Attaching the front brackets



1. The device
2. Front brackets

3. Screws, 8-32 x 5/16-in., flathead Phillips

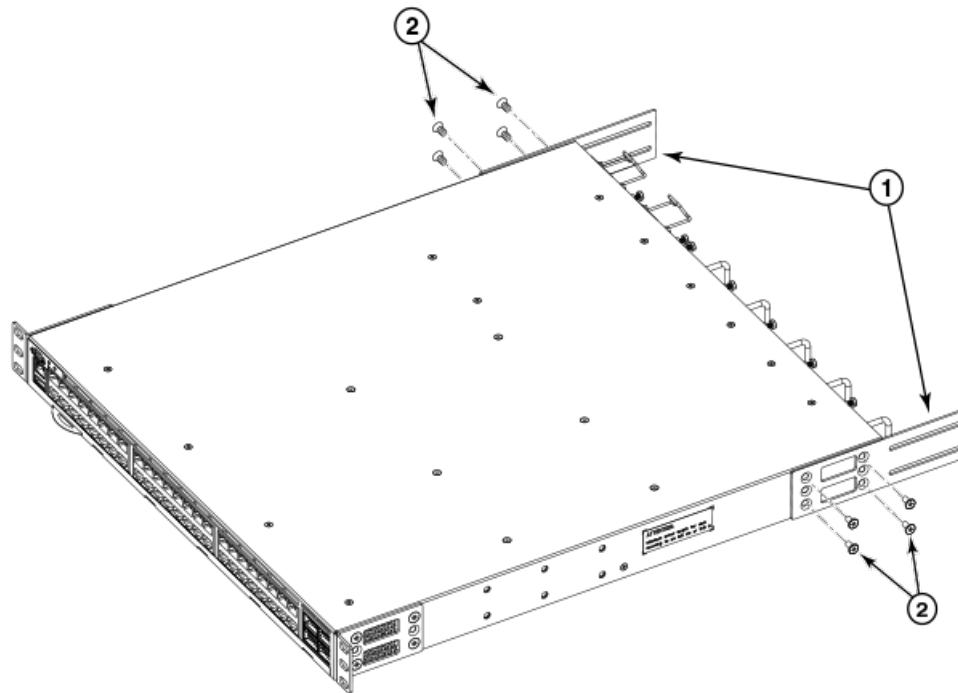
Attaching the bracket extensions to the device

Complete the following steps to attach the extension brackets to the device. There are medium and long extension brackets that you can use for this step.

1. Select the proper length bracket extension for your rack depth.
2. Position the right bracket extension along the side of the device as shown in [Figure 18](#).
3. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket extension and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
4. Repeat step 2 and step 3 to attach the left bracket extension to the left side of the device.

5. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 18 Attaching the bracket extensions to the device



1. Bracket extension

2. Screws, 8-32 x 5/16-in., flathead Phillips

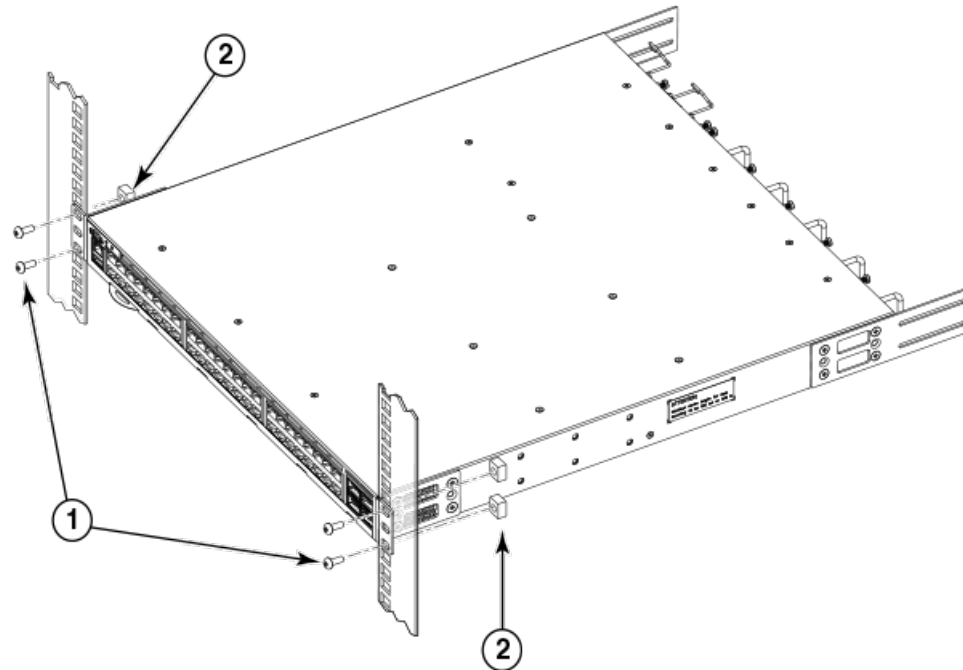
Installing the device in the rack

Complete the following steps to install the device in the rack.

1. Position the device in the rack, as shown in [Figure 19](#), providing temporary support under the device until the rail kit is secured to the rack.
2. Attach the right front bracket to the right front rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left front rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.

4. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 19 Positioning the device in the rack



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

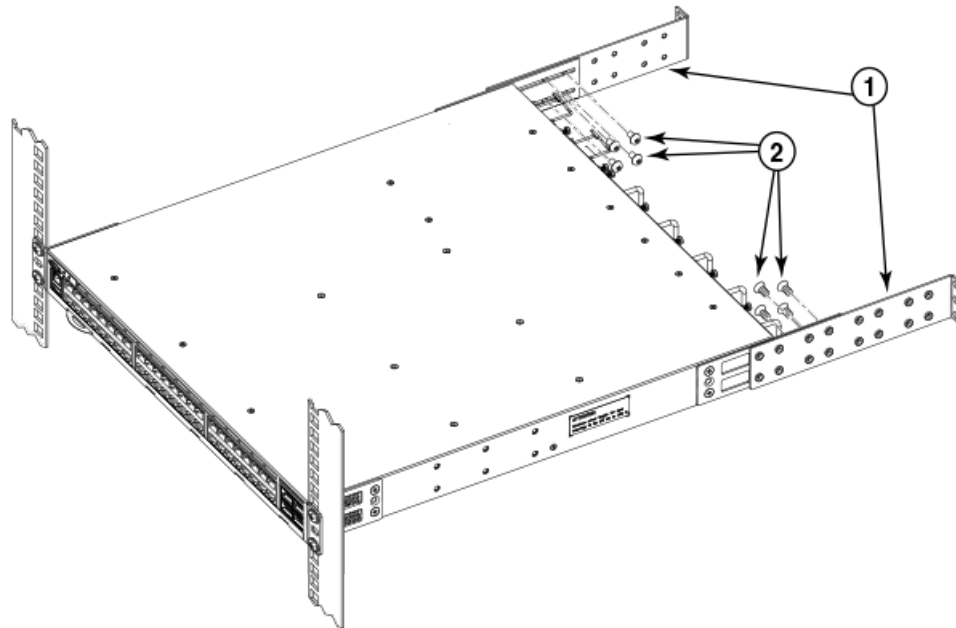
Attaching the rear brackets to the extensions

Complete the following steps to attach the rear brackets to the extensions. There are short and long rear brackets that you can use for this step. Choose the correct bracket for the depth of your rack.

1. Select the proper length rear bracket for your rack depth.
2. Slide the right rear bracket onto the right bracket extension, as shown in the following figure.
3. Attach the brackets using four 6-32 x 1/4-in. panhead screws.
If possible, leave at least one empty vertical pair of holes between the screws for better support.
4. Repeat step 2 and 3 to attach the left rear bracket to the left bracket extension.

5. Adjust the brackets to the rack depth and tighten all the 6-32 x 1/4-in. screws to a torque of 9 in-lb (10 cm-kg).

FIGURE 20 Attaching the rear brackets to the extensions



1. Rear brackets

2. Screws, 6-32 x 1/4-in., panhead Phillips

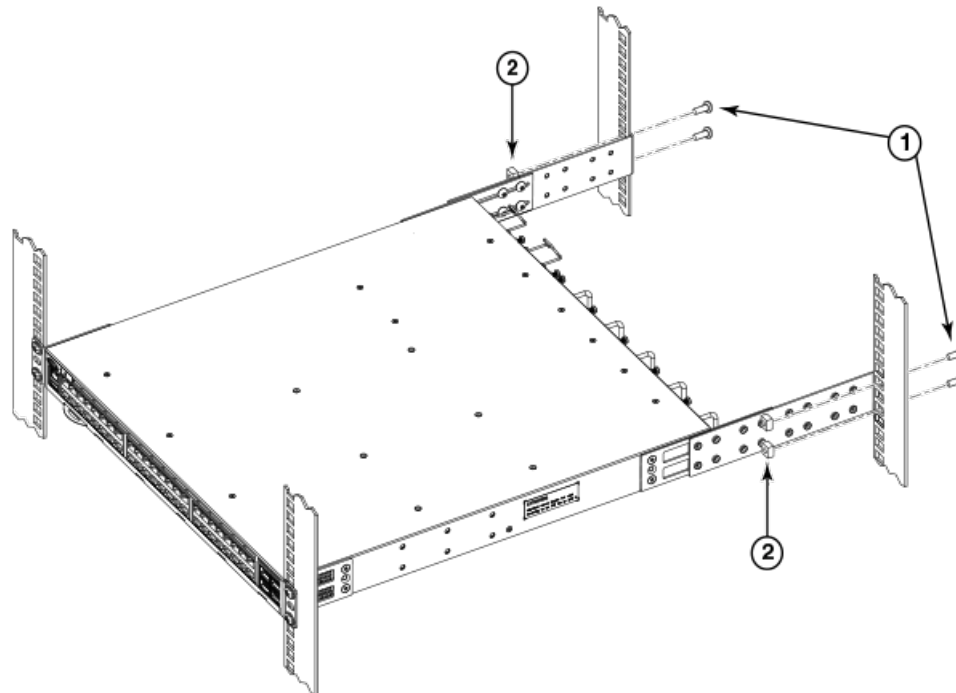
Attaching the rear brackets to the rack posts

Complete the following steps to attach the rear brackets to the rack posts.

1. Attach the right rear bracket to the right rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts, as shown in [Figure 21](#). Use the upper and lower holes in the bracket.
2. Attach the left rear bracket to the left rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.

3. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 21 Attaching the rear brackets to the rack posts



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

Flush-rear (recessed) mounting

The flush-rear (recessed) mounting is similar to the flush-front mounting except that the brackets are reversed on the device.



CAUTION

The device must be turned off and disconnected from the fabric during this procedure.

NOTE

The illustrations in the rack installation procedures show a 1U device, but the instructions are the same for a 2U device. The illustrations in the rack installation procedures are for reference only and may not show the actual device.

Complete the following tasks to install the device in a four-post rack:

1. [Attaching the front brackets to the rear of the device](#) on page 50
2. [Attaching the extensions to the front of the device](#) on page 50
3. [Installing the device in the rack](#) on page 51
4. [Attaching the rear brackets to the extensions at the front of the device](#) on page 52
5. [Attaching the rear brackets to the front rack posts](#) on page 54

Attaching the front brackets to the rear of the device

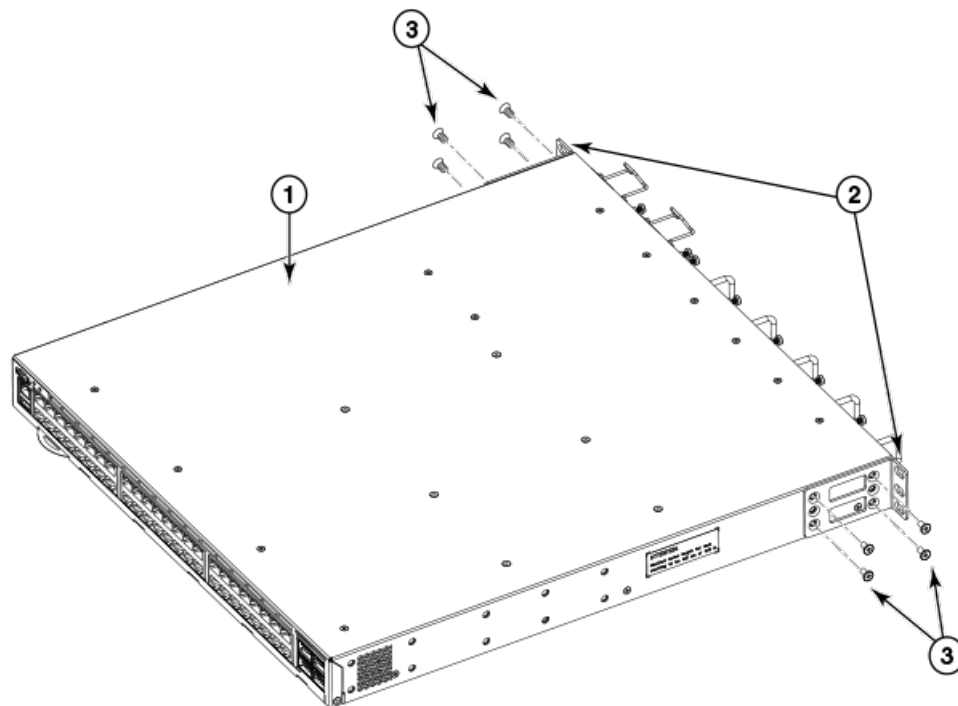
NOTE

In this installation, the brackets are named as listed in the parts list even though the installation of the brackets is reversed from the flush-front installation.

Complete the following steps to attach the front brackets to the rear of the device.

1. Position the right front bracket with the flat side against the right rear side of the device, as shown in [Figure 22](#).
2. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.
3. Repeat step 1 and step 2 to attach the left front bracket to the left side of the device.
4. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 22 Attaching the front brackets to the rear of the device



1. The device
2. Front brackets

3. Screws, 8-32 x 5/16-in., flathead Phillips

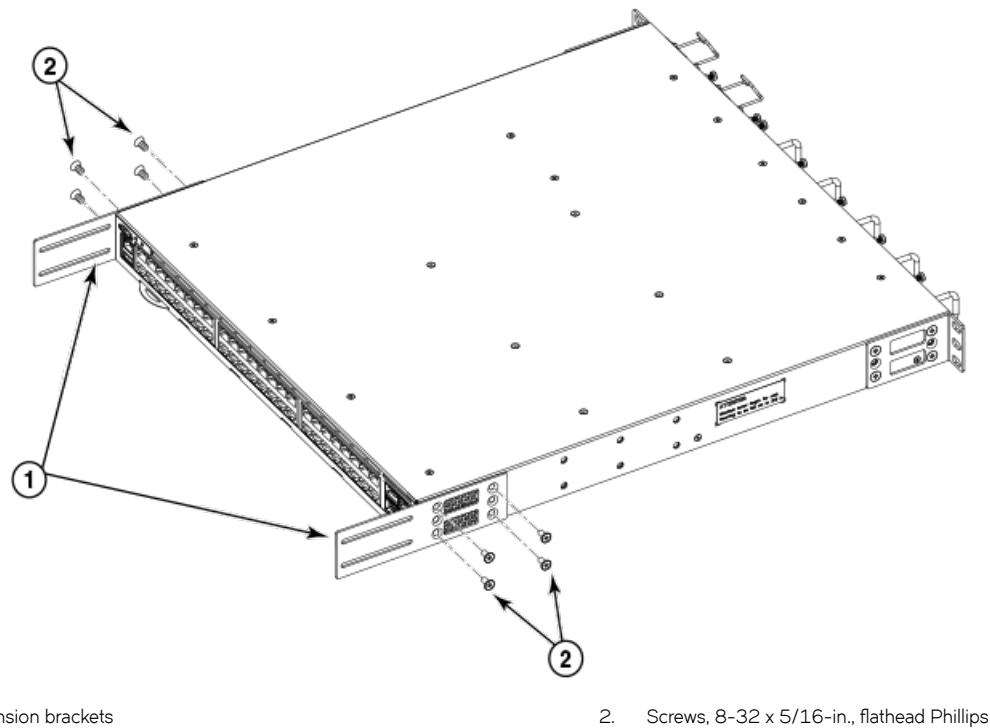
Attaching the bracket extensions to the front of the device

Complete the following steps to attach the bracket extensions to the front of the device. There are medium and long extension brackets that you can use for this step.

1. Select the proper length extension bracket for your rack depth.
2. Position the right bracket extension along the side of the device as shown in [Figure 23](#).
3. Insert four 8-32 x 5/16-in. flathead screws through the vertically aligned holes in the bracket extension and then into the holes on the side of the device. Use the upper and lower screw holes, leaving the center holes empty.

4. Repeat step 2 and step 3 to attach the left front bracket extension to the left side of the device.
5. Tighten all the 8-32 x 5/16-in. screws to a torque of 15 in-lb (17 cm-kg).

FIGURE 23 Attaching the bracket extensions to the device



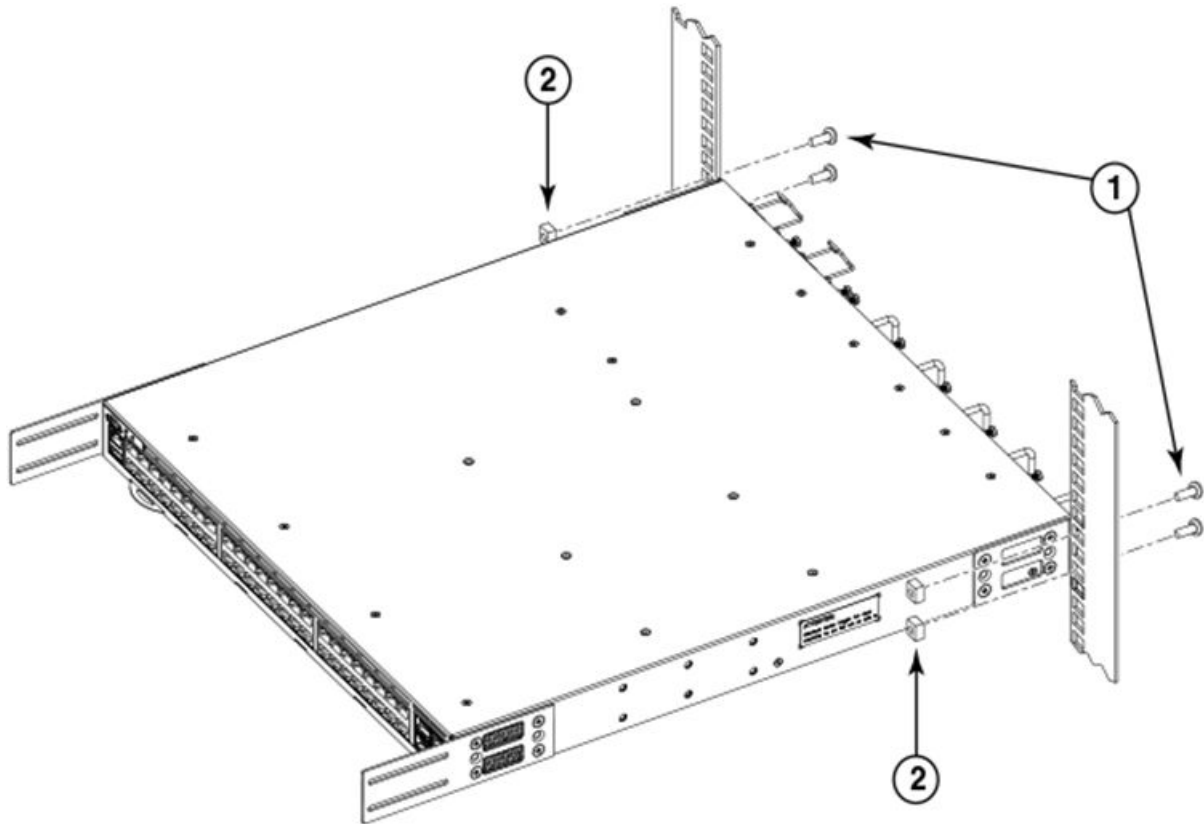
Installing the device in the rack

Complete the following steps to install the device in the rack.

1. Position the device in the rack, as shown in [Figure 24](#), providing temporary support under the device until the rail kit is secured to the rack.
2. Attach the right front bracket to the right rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Attach the left front bracket to the left rear rack post using two 10-32 x 5/8-in. panhead screws and two retainer nuts. Use the upper and lower holes in the bracket.

4. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 24 Positioning the device in the rack



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

Attaching the rear brackets to the extensions at the front of the device

Complete the following steps to attach the rear brackets to the extensions. There are short and long front brackets that you can use for this step.

1. Select the proper length rear bracket for your rack depth.
2. Slide the right rear bracket onto the right extension.

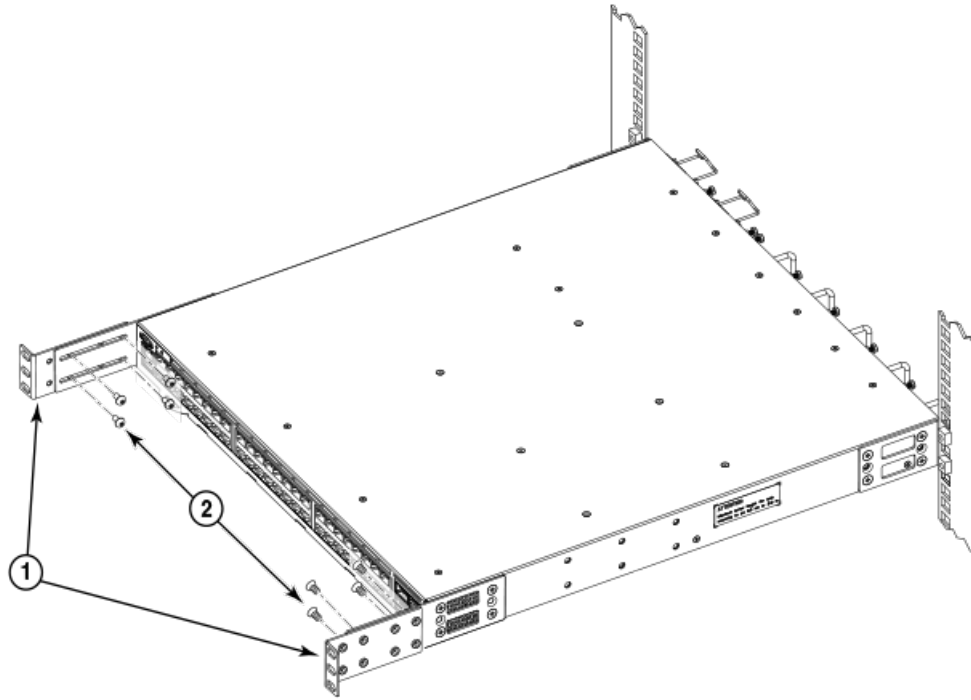
The short rear brackets are shown in [Figure 25](#). Use the first and third vertical pairs of holes for the screws.

Refer to [Figure 26](#) for the positioning of the short or long brackets and screws.

3. Attach the brackets using four 6-32 x 1/4-in. panhead screws.
4. Repeat step 2 and step 3 to attach the left rear bracket to the left extension.

- Adjust the brackets to the rack depth and tighten all the 6-32 x 1/4-in. screws to a torque of 9 in-lb (10 cm-kg).

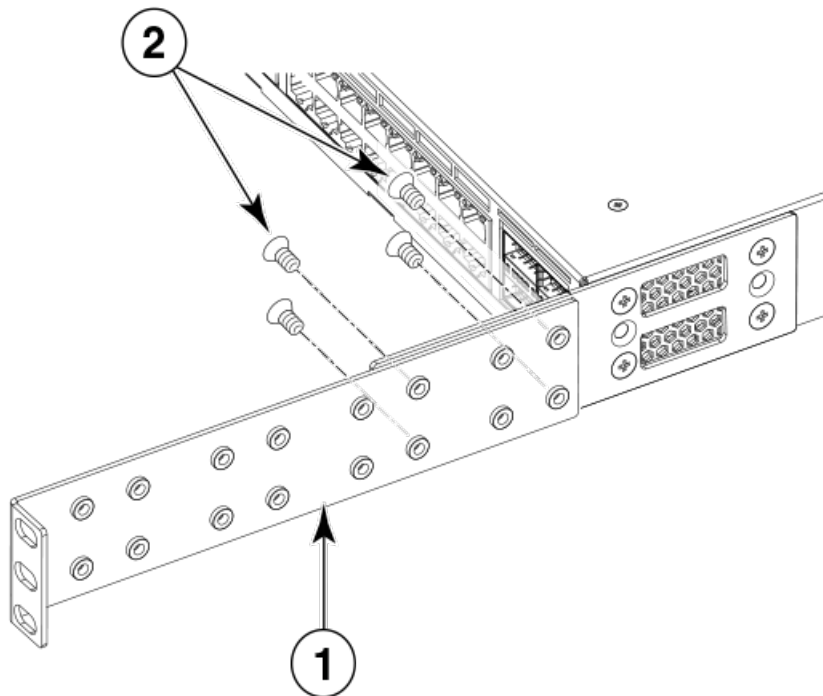
FIGURE 25 Attaching the rear brackets to the extensions at the front of the device



1. Rear brackets, short

2. Screws, 6-32 x 1/4-in., panhead Phillips

FIGURE 26 Attaching the short or long rear brackets to the extensions



1. Rear bracket, short or long

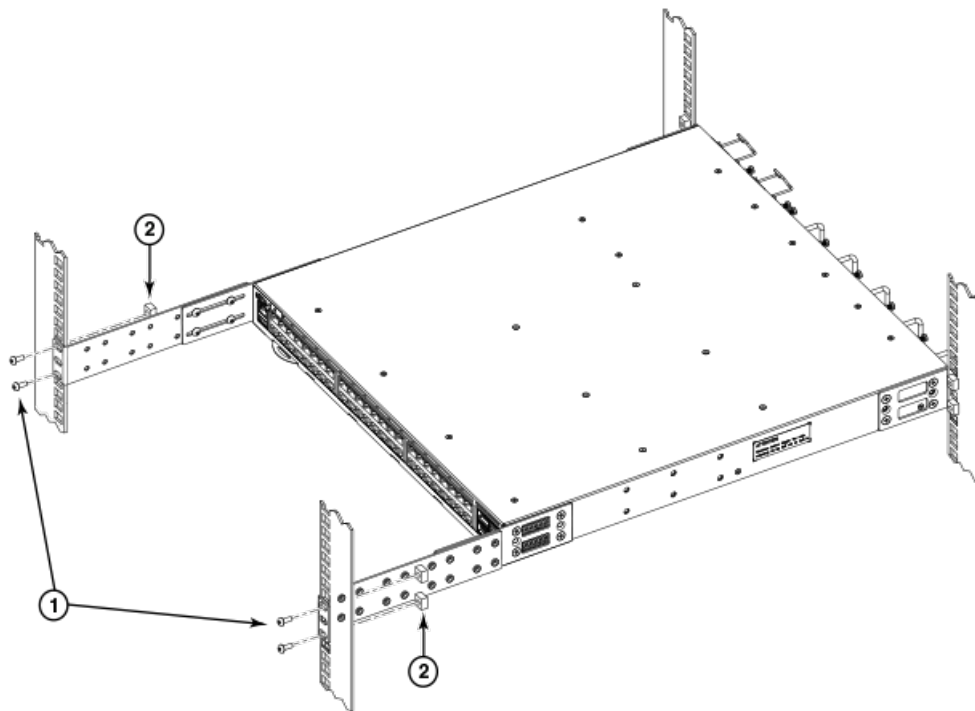
2. Screws, 6-32 x 1/4-in., panhead Phillips

Attaching the rear brackets to the front rack posts

Complete the following steps to attach the rear brackets to the front rack posts.

1. Attach the right rear bracket to the right front rack post using two 10-32 x 5/8-in. screws and two retainer nuts, as shown in [Figure 27](#). Use the upper and lower holes in the bracket.
2. Attach the left rear bracket to the left front rack post using two 10-32 x 5/8-in. screws and two retainer nuts. Use the upper and lower holes in the bracket.
3. Tighten all the 10-32 x 5/8-in. screws to a torque of 25 in-lb (29 cm-kg).

FIGURE 27 Attaching the rear brackets to the front rack posts



1. Screws, 10-32 x 5/8-in., panhead Phillips

2. Retainer nuts, 10-32

Initial Setup and Verification

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- Establishing an Ethernet connection..... 59
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- Setting the date and time..... 62
- Backing up the configuration..... 62
- Installing cable management kit..... 63

Initial setup and configuration checklist

Use the procedures in the following table to initially configure and setup the device, verify correct operation, and back up the configuration.

TABLE 11 Initial setup and configuration checklist

Task	Task details or additional information
Attach a management station, establish a serial connection, and change the default passwords (optional).	Refer to Establishing a serial connection on page 57. After completing this task, log in to the serial port to configure the device.
Set the IP address, subnet mask, and the default gateway IP address.	Use the chassis virtual-ip or chassis virtual-ipv6 commands to configure an IP address. For more information, refer to Configuring a static IP address on page 59.
Establish an Ethernet connection.	By establishing an Ethernet connection, you can complete the device configuration using a serial or Telnet session. Refer to Establishing an Ethernet connection on page 59 for more information.
Customize the chassis and host names.	Use the switch-attributes chassis-name and switch-attributes host-name commands to change the default host name. For more information, refer to Customizing the chassis and host names on page 60.
Set the date and time.	<ul style="list-style-type: none"> • Use the clock set command to set the date and time. • Use the clock timezone command to set the time zone. • After you configure the system time, use commands in NTP configuration mode to synchronize the time with an external NTP server. Refer to Setting the date and time on page 62 for more information. For detailed command information, refer to <i>Extreme SLX-OS Management Configuration Guide</i> for the SLX 9030/9030-T device.
Optional: Configure the DNS service.	Use the ip dns domain-name and, if required, their dns name-server command to create DNS server entries. Refer to Configuring the DNS service on page 61 for more information. For detailed command information refer to <i>Extreme SLX-OS Management Configuration Guide</i> for the SLX 9030/9030-T device.
Verify that the device operates correctly.	<ul style="list-style-type: none"> • Check the LEDs to verify operation of module components in the device. Refer to ExtremeSwitching SLX 9030 Technical Specifications on page 97 under the LEDs section.

TABLE 11 Initial setup and configuration checklist (continued)

Task	Task details or additional information
	<ul style="list-style-type: none"> • The following commands can be useful to establish an operational baseline for the device. Refer to <i>Extreme SLX-OS Monitoring Configuration Guide</i> for the SLX 9030/9030-T device for more information about these commands. <ul style="list-style-type: none"> - show chassis - show system - show slots - show linecard - show environment fan - show environment power - show environment sensor - show environment temp
Back up the configuration.	Use the copy running-config command to copy the running configuration to the startup configuration. Refer to Backing up the configuration on page 62 for more information about this command.

Items required

The following items are required for initial setup and verification of the device:

- The device, mounted and installed with the required interface modules, FRUs, transceivers, and cables, and connected to a power source.
- A workstation computer with an installed terminal emulator application, such as HyperTerminal for Windows.
- An unused IP address with corresponding subnet mask and gateway address.
- A serial cable (provided) with an RJ-45 connector.
- Two Ethernet cables (one per management module).
- Optional: Access to an FTP server or USB device for backing up (uploading) or downloading the device configuration or collecting diagnostic output data.
- Optional: An Extreme USB drive for backing up (uploading) or downloading the device configuration or collecting diagnostic output data.

Providing power to the device

After you complete the physical installation, you can power on the system.

1. Install alternating-current (AC) or direct-current (DC) power supplies in the switch. Refer to [Power Supplies](#) on page 83 section of the guide.
2. Connect AC or DC power cables to the power supply connectors on the rear panel.

NOTE

The equipment should be installed near a power source and in an easily accessible location.

3. Connect the power cables to the 100-240 VAC or 48-60 VDC power source. The power sources should be on separate circuits to protect against power failure. Ensure that the power cords have a minimum service loop of 6 inches available and are routed to avoid stress.

NOTE

Power is supplied to the device as soon as the first power supply is connected.

- After the device has booted, verify that the power and status LEDs are green. The power supply LEDs display amber until power-on self-test (POST) is complete, and then change to green. The switch usually requires several minutes to boot and complete POST.

NOTE

To turn the system off, simply unplug the power cables.

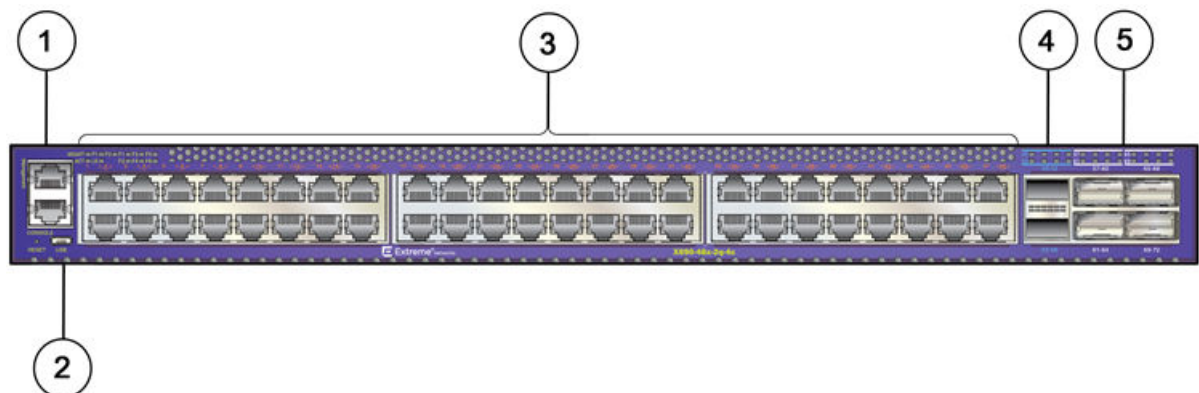
For more information about how to interpret LEDs, refer to [Monitoring the Device](#) on page 77 under LED Port Behavior section.

Establishing a serial connection

To establish a serial connection to the console port on the device, complete the following steps.

- Verify that the device is powered on by verifying that all power LED indicators on the management, interface, power supply, and fan modules display a steady green light.
- Connect the RJ-45 serial cable provided with the device to the management Ethernet port of the device.

FIGURE 28 Port-side view of the SLX 9030 Switch



- | | |
|---|--|
| 1. Console/management port | 4. 10Gb/40Gb QSFP+ port |
| 2. USB port | 5. 10Gb/25Gb/40Gb/100Gb capable QSFP28 ports |
| 3. 1Gb/10Gb SFP+ ports (SLX 9030) or 1Gb/10GBASE-T ports (SLX 9030-T) | |

NOTE

The console/management port is intended primarily for the initial setting of the IP address.

- Access the device using a terminal emulator application (such as HyperTerminal in a Windows environment or Tip in a UNIX environment).
- Disable any serial communication programs running on the workstation (such as synchronization programs).

5. Open a terminal emulator application (such as HyperTerminal on a PC, or TERM, Tip, or Kermit in a UNIX environment), and configure the application as follows:
 - In a Windows environment:

Parameter	Value
Bits per second	115200
Data bits	8
Parity	None
Stop bits	1
Flow control	None

NOTE

Flow control is not supported on the serial consoles when attached to remote terminal servers and must be disabled to ensure proper operation.

- In a UNIX environment, enter the following string at the prompt:

```
tip /dev/ttyb -115200
```

If `ttyb` is already in use, use `ttya` instead and enter the following string at the prompt:

```
tip /dev/ttya -115200
```

When the terminal emulator application stops reporting information, press **Enter**. You receive the following login prompt:

```
SLX login:
```

6. Log in to the console using *admin* as the default login name and *password* as the default password. As login to the device occurs, you are prompted to change the device passwords.

```
Please change passwords for switch default accounts now.
Use Control-C to exit or press 'Enter' key to proceed.
```

7. Press **Enter** to step through a procedure to change the passwords as shown in the following example. To skip modifying the password, press **Ctrl+C**.

```
Warning: Access to the Root and Factory accounts may be
required for proper support of the switch. Please ensure the Root
and Factory passwords are documented in a secure location. Recovery of
a lost Root or Factory password will result in fabric downtime.
```

```
for user - admin
Changing password for admin
Enter old password:
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
```

Passwords can be 8 through 40 characters long. They must begin with an alphabetic character. They can include numeric characters, the period (.), and the underscore (_) only. Passwords are case-sensitive, and they are not displayed when you enter them on the command line. For more information on passwords, refer to *Extreme SLX-OS Security Configuration Guide* for the SLX 9030/9030-T device.

Configuring a static IP address

Complete the following steps to set a static IP address.

NOTE

You can also use DHCP to configure a chassis static IP address on the management module.

1. Log in to the device using an account that has the admin role.
2. Enter global configuration mode using the **configure terminal** command.
3. Use the **chassis virtual-ip** command to set the IP address for the chassis.

```
device(config)# chassis virtual-ip 10.20.236.132/20
```

4. Use the **ip address** command to set the Ethernet IP address for the management modules.

If you are going to use an IPv4 IP address, enter the IP address in dotted decimal notation.

When you have assigned the IP address to management interface 1, you should also assign the IP address to management interface 2 if you have installed a second management module.

```
device(config)# interface Management 1
device(config-Management-1)# no ip address dhcp
device(config-Management-1)# ip address 10.24.85.81/20
```

If you are going to use an IPv6 address, enter the network information in colon-separated notation as prompted after the **ipv6 address** operand.

```
device(config)# interface Management 1
device(config-Management-1)# no ip address dhcp
device(config-Management-1)# ipv6 address \
fd00:60:69bc:832:e61f:13ff:fe67:4b94/64
```

5. Return to privileged EXEC mode by entering **exit**.

```
device(config)# exit
device#
```

6. To display the configuration, use the **show running-config interface Management** command.

```
device# show running-config interface Management 1
interface Management 1
  no ip address dhcp
  ip address 10.24.85.81/20
  ipv6 address fd00:60:69bc:832:e61f:13ff:fe67:4b94/64
!
```

Establishing an Ethernet connection

After using a serial connection to configure the IP addresses for the device, you can connect the active management module to the local area network (LAN).

NOTE

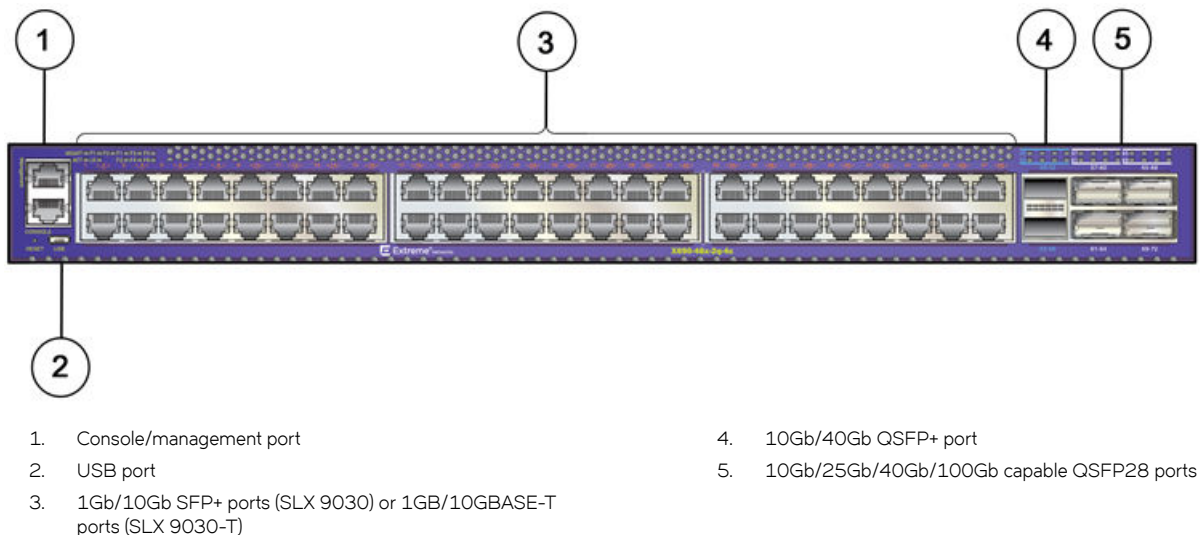
Connecting interface modules to a private network or VLAN is recommended.

After establishing an Ethernet connection, you can complete the device configuration using a serial console connection, Telnet connection, or existing management applications.

Perform the following steps to establish an Ethernet connection to the device.

1. Remove the shipping plug from the Ethernet port on the active management module.
The active management module has the LED labeled ACTIVE on the front panel illuminated in blue.
2. Insert one end of an Ethernet cable into the Management Ethernet port.

FIGURE 29 Port-side view of the SLX 9030/9030-T Switch



3. Connect the other end to 1G, 100 MbE, or 10 MbE Ethernet LAN.
4. Complete any additional device configuration procedures for the device using one of the following steps:
 - Log in to the device using a serial console connection and admin login.
 - Log in to the device through a Telnet or SSH session using the chassis management IP address and admin login.

Customizing the chassis and host names

To configure a chassis and host name, complete the following task.

The chassis and host names can be up to 30 characters long; can include letters, numbers, hyphens, and underscore characters; and must begin with a letter.

Extreme recommends that you customize the chassis name for each platform because some of the system logs refer to the platform by its chassis name.

1. Log in to the device using one of the following methods:
 - A serial console connection to the active management module. The active management module has the LED labeled ACTIVE on the front panel illuminated in blue.
 - A Telnet session using the chassis management IP address.
2. Log in to the device using *admin* as your login name. If you have not changed the default password, use *password*.

3. Change the chassis name by completing the following steps.
 - a) Enter **configure terminal** to enter global configuration mode.
 - b) Enter **switch-attributes chassis-name** *chassis-name*, where *chassis-name* is the new chassis name.
 - c) Enter **exit** to return to privileged EXEC mode.
 - d) To verify the new chassis name, enter the **show chassis** command.
4. Change the host name by completing the following steps.
 - a) Enter **configure terminal** to enter global configuration mode.
 - b) Enter **switch-attributes host-name** *host-name*, where *host-name* is the new host name.
 - c) Enter **exit** to return to privileged EXEC mode.
 - d) To verify the new host name, enter the **show running-config | include host** command.
5. Record the new names for future reference.

Configuring the DNS service

To view the current DNS configuration, enter the **show ip dns** command. To manually configure a unique domain name for your device, complete the following steps.

1. Log in to the device using one of the following methods:
 - A serial console connection to the active management module. The active management module has the LED labeled ACTIVE on the front panel illuminated in blue.
 - A Telnet session using the chassis management IP address.
2. Log in to the device using *admin* as your login name. If you have not changed the default password, use *password* for password.
3. Enter the **ip dns domain-name** *domain-name* command, where *domain-name* is the domain name for your device.
4. (Optional) Enter **ip dns name-server** *ip-address*, where *ip-address* is the IP address of the DNS server.

Verifying correct operation

Perform the following steps to verify correct operation of the device.

1. Check the LEDs of all power supplies, fans, and modules to verify that all are functional. For a more detailed description of the LEDs on each system component, refer to [Monitoring the Device](#) on page 77.
2. Log into the device using one of the following methods:
 - A serial console connection to the active management module. The active management module has the LED labeled ACTIVE on the front panel illuminated in blue.
 - A Telnet session using the chassis management IP address.
3. Log in to the device using *admin* as your login name. If you have not changed the default password, use *password* for password.

- Verify the correct operation of the device by entering the following commands. Copy output to a file to save the information.

TABLE 12 Commands to verify correct operation

Command	Description
show environment power	Displays power supply status and information
show environment fan	Displays fans status and information
show chassis or show system	Displays device status and information
show slots	Displays the current status of each slot in the chassis
show environment temp or show environment sensor	Displays temperature status and information
show environment history	Displays the history of the installed modules
show history	Displays CLI history
show logging auditlog , and show logging raslog	Displays any errors

Setting the date and time

Date and time are used for logging events. The operation of the device does not depend on the date and time; an Extreme device with an incorrect date and time value functions properly. Because the date and time are used for logging, error detection, and troubleshooting, you should set them correctly.

Backing up the configuration

Extreme recommends backing up the configuration on a regular basis to ensure that a complete configuration is available for downloading to a replacement device.

Observe the following notes about configuration data:

- Passwords are not saved in the configuration file, and are not uploaded during a configuration upload.
 - It is recommended that the configuration be backed up on a regular basis to ensure that a complete configuration is available for downloading to a replacement chassis.
- Log in to the device using one of the following methods:
 - A serial console connection to the active management module. The active management module has the LED labeled ACTIVE on the front panel illuminated in blue.
 - A command line interface (CLI) session using the chassis management IP address.
 - Log in to the device using *admin* as your login name. If you have not changed the default password, use *password*.
 - Enter **copy running-config { startup-config | flash:// | ftp:// | scp:// | sftp:// | tftp:// | usb:// }**, where:
 - startup-config** saves the running configuration to the startup configuration.
 - flash://* saves the running configuration to the flash drive in the specified location.
 - ftp://* saves the running configuration to the specified FTP server address.
 - scp://* saves the running configuration to the specified secure copy (SCP) server location.
 - sftp://* saves the running configuration to the specified Secure FTP (SFTP) server address.
 - tftp://* saves the running configuration to the specified TFTP server address.
 - usb://* saves the running configuration to the USB drive attached to the device (for example, plugged into the USB port in the management module).

Installing cable management kit

For more information about installing cable management, refer to managing cables section [Managing cables](#) on page 67 .

Transceivers and Cables

• Supported transceivers and cables.....	65
• Time and items required.....	65
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Supported transceivers and cables

SLX 9030/9030-T Switch requires QSFP28 optics for 100GbE connectivity, QSFP+ optics for 40GbE connectivity, and 40GbE-to-10GbE breakouts for 10GbE connectivity.

SLX 9030/9030-T Switch requires SFP+ optics for 10GbE connectivity and SFP optics for 1GbE connectivity.

For current information about transceivers and cables that is supported by this device, refer to the *Extreme Ethernet Optics Family Datasheet* on <https://cloud.kapostcontent.net/pub/a070d154-d6f1-400b-b2f0-3d039ae2f604/data-center-ethernet-optics-data-sheet> and to the current *SLX-OS18x1.00 for ExtremeSwitching SLX 9030/9030-T Release Notes* .

Time and items required

The installation or replacement procedure for one transceiver takes less than 5 minutes. Ensure that the following items are available:

- Required number of compatible power cables
- Required number of supported Extreme-branded transceivers
- Required number of compatible fiber-optic cables
- Optical transceiver extraction tool (for 10 Gbps transceiver only)

NOTE

Most Extreme devices come with a transceiver extraction tool and holster. The extraction tool is designed to remove transceivers from modules where the space is limited.

FIGURE 30 Optical transceiver extraction tool



Precautions specific to transceivers and cables



DANGER

All fiber-optic interfaces use Class 1 lasers.



DANGER

Use only optical transceivers that are qualified by Extreme Networks, Inc. and comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I, and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.



CAUTION

Do not use the port cover tabs to lift the module. They are not designed to support the weight of the module, which can fall and be damaged.



CAUTION

Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

Cleaning the fiber-optic connectors

To avoid problems with the connection between the fiber-optic transceiver (SFP+, QSFP, or QSFP28) and the fiber cable connectors, Extreme strongly recommends cleaning both connectors each time you disconnect and reconnect them. Dust can accumulate on the connectors and cause problems such as reducing the optic launch power.

To clean the fiber cable connectors, Extreme recommends using a fiber-optic reel-type cleaner. When not using an SFP+ or QSFP connector, make sure to keep the protective covering in place.

Managing cables

The minimum radius that a 50 micron cable can be bent under full tensile load is 5.1 cm (2 in.). For a cable under no tensile load, that minimum is 3.0 cm (1.2 in.). Cables can be organized and managed in a variety of ways, for example, using cable channels on the sides of the rack or patch panels to minimize cable management. Following is a list of additional recommendations:

- Plan for rack space required for cable management before installing the device.
- Leave at least 1 m (3.28 ft) of slack for each port cable. This provides room to remove and replace the device, allows for inadvertent movement of the rack, and helps prevent the cables from being bent to less than the minimum bend radius.
- For easier maintenance, label the fiber-optic cables and record the devices to which they are connected.
- Keep LEDs visible by routing port cables and other cables away from the LEDs.
- Do not route the cables in front of air vents.
- Use Velcro[®] type straps to secure and organize fiber-optic cables.
- Route the cables away from LEDs to keep them visible.
- Use the cable management comb that attaches to the chassis for simple cable management. The comb can be installed without service disruption.



CAUTION

Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

NOTE

Do not use tie wraps with optical cables because they are easily overtightened and can damage the optic fibers.

Installing an SFP+ transceiver

While non-Extreme optics are supported, Extreme-qualified transceivers are recommended. The port might not become operational using unqualified transceivers.

To insert an SFP+ transceiver, complete the following steps.

NOTE

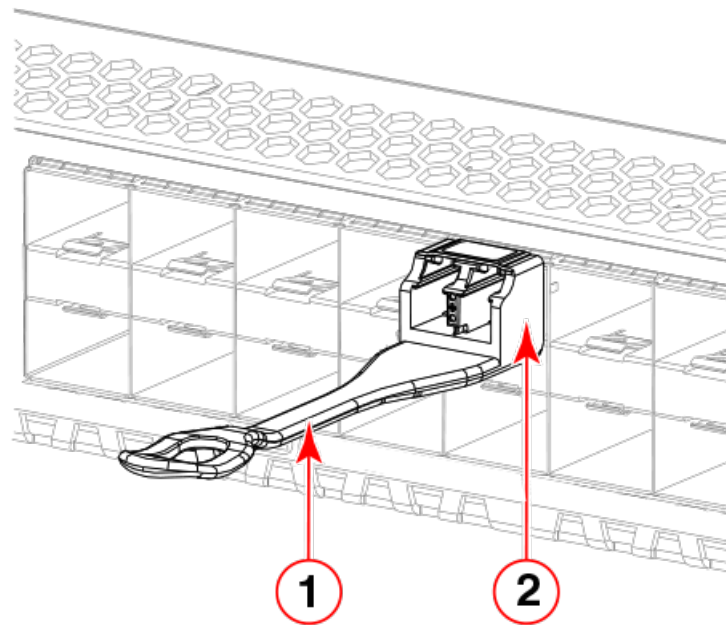
Route cables to the side so that the line cards can be removed without disturbing the cables to the other line cards.

NOTE

Always use the pull tab to insert or remove transceivers as they might be hot.

1. Perform one of the following steps, depending on your transceiver type.
 - If the transceiver uses a pull tab, use the pull tab to help push the transceiver into the port until it is firmly seated and the latching mechanism clicks.

FIGURE 31 Installing an SFP+ transceiver with pull tab into the interface module port

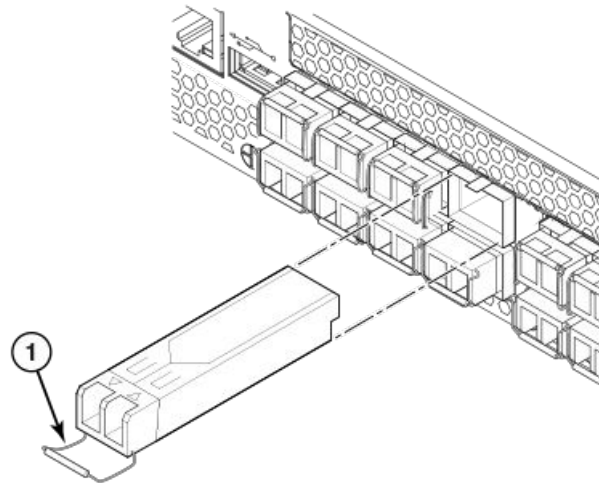


1. Pull tab

2. Transceiver

- If the transceiver uses a bail latch mechanism (10 GbE transceivers only), ensure that the bail (wire handle) is in the unlocked position, grasp the transceiver, and push it into the port until firmly seated. Close the bail to latch the transceiver in the slot.

FIGURE 32 Installing an SFP+ transceiver with bail latch into the interface module port



1. Bail

Transceivers are keyed so that they can only be inserted with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented.

2. Position a cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

NOTE

Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not insert any unsupported cable intended for an other type of transceiver into a regular SFP+ transceiver. You may damage the cable as well as the transceiver.

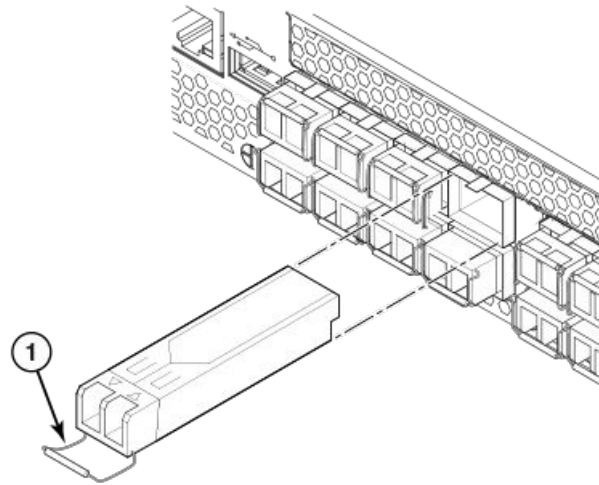
Replacing an SFP+ transceiver

Complete the following steps to remove and then install a new SFP+ transceiver.

1. Remove any cables that are inserted into the transceiver.

2. To remove the transceiver, perform one of the following steps, depending on your transceiver type.
 - If transceiver has a bail latch mechanism (10 GbE transceivers), unlatch from the port by pulling the bail (wire handle) away from its pivot point using your fingers or the hooked end of the transceiver extraction tool. Pull the transceiver out from the port slightly using the bail, and then grasp the transceiver with your fingers and slide it straight out of the port.

FIGURE 33 Installing an SFP+ transceiver with bail latch into the interface module port



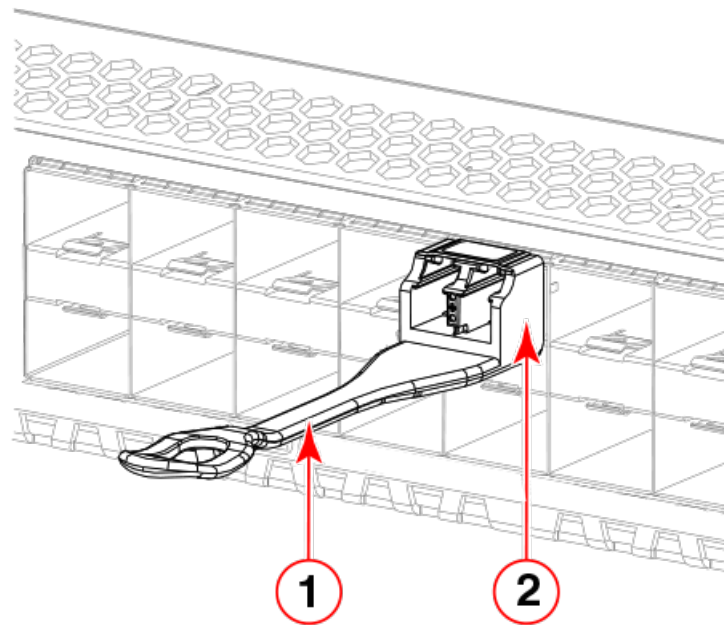
1. Bail

- If transceiver has a pull tab, grasp the pull tab and pull the transceiver straight out from the port.

NOTE

Grasp the pull tab near the body of the transceiver to reduce the chances of bending the pull tab. As the transceiver may be hot, avoid touching it.

FIGURE 34 Replacing a SFP+ optical transceiver with pull tab into the interface module port



1. Pull tab

2. Transceiver

3. To install the transceiver, perform one of the following steps depending on your transceiver type:
 - If transceiver has a pull tab, use the pull tab to help push the transceiver into the port until it is firmly seated and the latching mechanism clicks.
 - If transceiver has a bail latch mechanism, ensure that the bail (wire handle) is in the unlocked position, grasp the transceiver, and push it into the port until firmly seated. Close the bail to latch the transceiver in the slot.

Transceivers are keyed so that they can only be inserted with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented.

4. Position a cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented.

Installing a QSFP28 transceiver

While non-Extreme optics are supported, Extreme-qualified transceivers are recommended. The port might not become operational or it may have a higher error rate using unqualified transceivers.

The following additional notes apply to the QSFP28 transceivers:

- While non-Extreme optics are supported, Extreme-qualified transceivers are recommended. If using 40GbE-to-10GbE breakouts, each QSFP28 transceiver contains four individual 10 GbE ports. Be aware that any problems with one port could affect all four ports in the quad if the QSFP28 must be replaced.
- Some QSFP28 transceivers have an integrated cable attached. You do not need to install a separate cable.

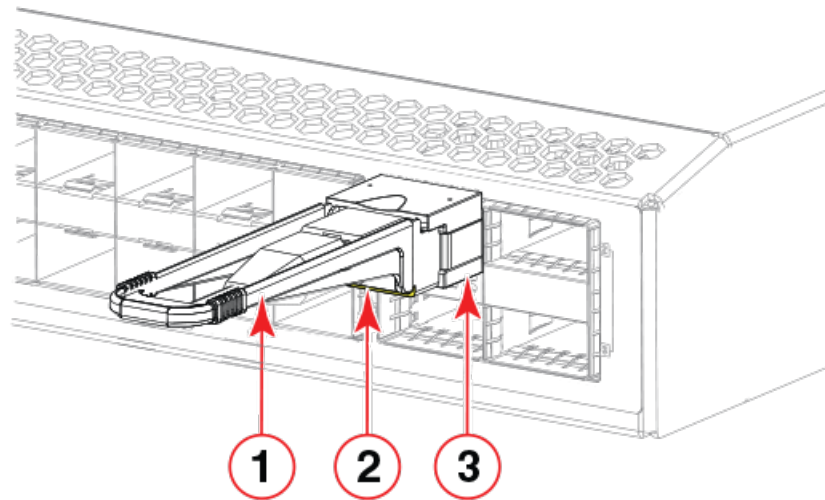
To insert an QSFP28 transceiver and cable, complete the following steps.

1. Push the transceiver into the port using the pull tab. Transceivers are keyed so that they can only be inserted with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented. Push the correctly oriented transceiver into the port until it is firmly seated and the latching mechanism clicks.

NOTE

Always use the transceiver pull tab to insert or remove the QSFP28 transceivers, as the transceiver might be hot.

FIGURE 35 Installing a QSFP28 transceiver into the interface module port



1. Pull tab
2. QSFP28 cable

3. QSFP28 transceiver

After insertion, the LEDs have the following status:

- Off - no link
 - On - link, no traffic
 - Rapid flash - link with traffic
 - Slow flash (one second on, one second off) - beaconing feature
2. Position the cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

NOTE

If your transceiver has an integrated cable, you do not need to install a cable.

NOTE

Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented. Do not insert any unsupported cable intended for another type of transceiver into a regular QSFP28 transceiver. You may damage the cable as well as the transceiver.

3. Organize cables to avoid covering LEDs and air vents so that LCs can be removed. Refer to [Managing cables](#) on page 67 for more information.

Replacing a QSFP28 transceiver

Complete the following steps to remove and then install a new QSFP28 transceiver.

1. Remove any cables that are inserted into the transceiver.

NOTE

If your transceiver has an integrated cable, you cannot remove the cable.

2. Grasp the transceiver pull tab and gently pull the transceiver straight out from the port.

NOTE

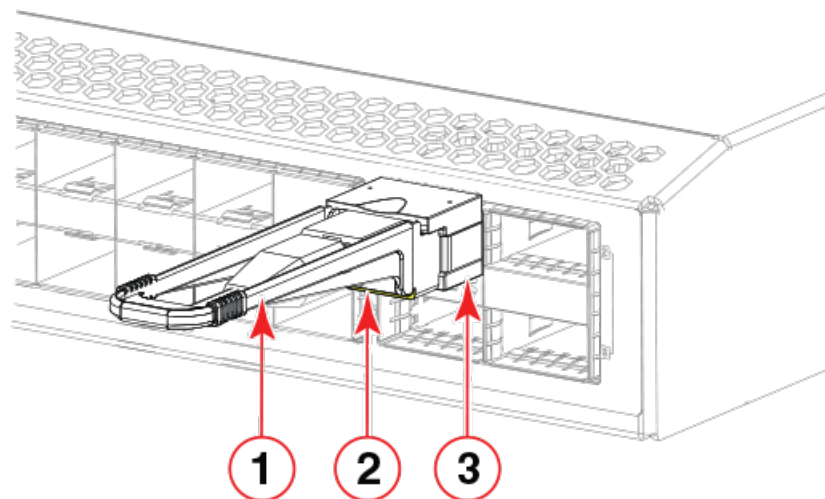
Grasp the pull tab near the body of the transceiver to reduce the chances of bending the pull tab. As the transceiver may be hot, always use the pull tab and avoid touching the transceiver body.

3. To insert the replacement transceiver, use the pull tab to carefully push the transceiver into the port. Transceivers are keyed so that they can only be inserted with the correct orientation. If a transceiver does not slide in easily, ensure that it is correctly oriented. Gently push the correctly oriented QSFP28 transceiver until the latching mechanism clicks.

NOTE

The following figure uses a generic interface module. Your interface module might look different.

FIGURE 36 Replacing a QSFP28 optical transceiver into blade port



1. Pull tab

2. QSFP28 cable connector

3. QSFP28 transceiver

- Position a cable so that the key (the ridge on one side of the cable connector) is aligned with the slot in the transceiver. Insert the cable into the transceiver until the latching mechanism clicks.

NOTE

If your transceiver has an integrated cable attached, you will not install a cable.

When both ends of the cable are inserted and the link is fully established, the LED displays steady green.

NOTE

Cables are keyed so that they can be inserted in only one way. If a cable does not slide in easily, ensure that it is correctly oriented.

- Organize cables to avoid covering LEDs and air vents. Refer to [Managing cables](#) on page 67 for more information.

Breakout cables

The copper breakout cables are terminated with optical connectors and are available in 1m, 3m, 5m, and greater lengths. No additional connectors or cabling are required when using the copper breakout. When using the fiber breakout cables, additional 10Gb optics are required.

For the SLX 9030 Series switch:

Interfaces 0/49 to 0/54 support up to 16 10GbE or up to 16 25GgE ports in breakout mode by using the following optics:

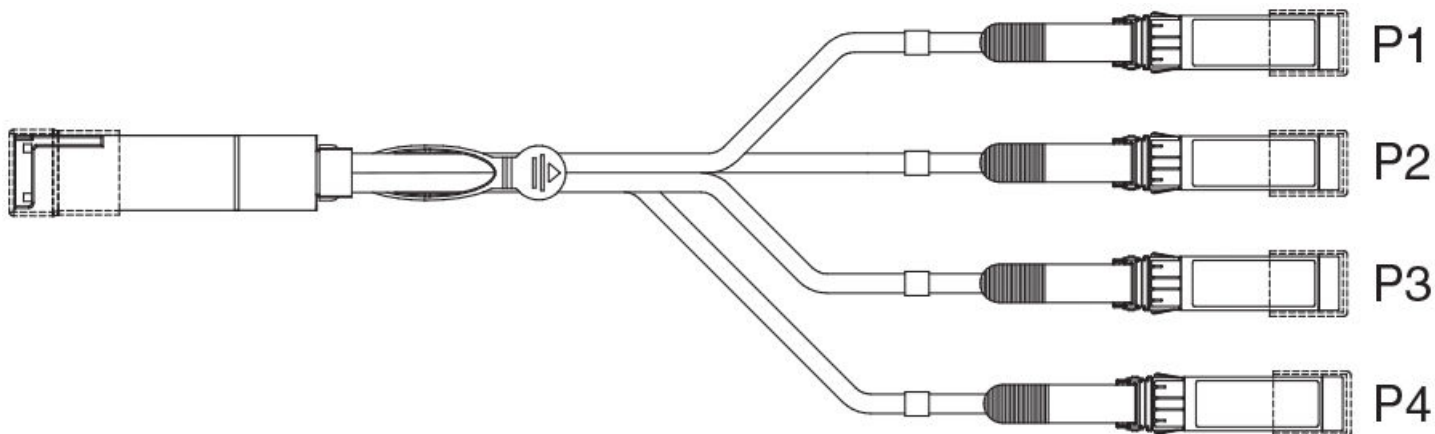
For 4x 10GbE breakout:

- 4 SFP+ 40GbE-to-10GbE copper breakout cables in 1m, 3m, or 5m or greater lengths.
- 40G-QSFP-SR4-INT (with fiber breakout cables and additional 10GbE optics).
- 40G-QSFP-ESR4 (with fiber breakout cables and additional 10GbE optics).

For 4x 25GbE breakout:

- 100G-QSFP-4SFP-P-XXX

FIGURE 37 QSFP+ to 4 SFP+ (4 x 10 GbE) direct-attach copper breakout cable



Verifying transceiver operation

To verify operation of a transceiver, view the LEDs on the transceiver. To find the LED locations on the interface modules, refer to the section [LED ports behavior](#) on page 79. After you have connected and configured the ports for Ethernet connectivity and connected the cable to another active port, the LED becomes solid green. When traffic is detected on the port, the light becomes blinking green.

You can also enter the **show interface status** and **show ip interface brief** commands to verify proper transceiver operation.

Monitoring the Device

- [Monitoring Overview.....](#) 77
- [LED Types.....](#) 77
- [LED ports behavior.....](#) 79

Monitoring Overview

The Extreme device is engineered for reliability and requires no routine operational steps or maintenance. You can monitor the device by paying attention to the following information:

- The LEDs showing the status of system components
- A description of the operations that the device performs when you power it on

The following commands can be especially helpful in monitoring the health status of various device components. For details about these commands, refer to the *Extreme SLX-OS Monitoring Configuration Guide* for the SLX 9030-48S/SLX 9030-48T platform.

- **show chassis**
- **show system**
- **show slots**
- **show linecard**
- **show environment fan**
- **show environment power**
- **show environment sensor**
- **show environment temp**

LED Types

On the SLX 9030 platforms, there are four types of LEDs visible on the front of the device faceplate. They are the following:

1. System power LED
2. System status LED
3. Ethernet Status LED
4. Port LEDs

System LEDs

There are two RJ-45 connectors on the front panel, one is 10/100/1000 Ethernet port, another is the RS232 console port.

FIGURE 38 System LEDs



The following Table defines the per device LEDs' behaviors.

TABLE 13 System LEDs Definition and Behavior

Items	LED Indication	Color	Behavior	Description
1	MGMT	Off		System No Powe
		Green	Solid Light	Normal Operation
		Amber	Blinking	Power supply failed or Fan module failed
2	ACT	Green	Light off	No packet transmitting or receiving
			Blinking	Packet transmitting or receiving
3	LK	Green	Light off	Port disabled or Link Down
			Solid Light	Link Up
4	PSU (P1, P2)	Green	Solid Light	Power On, Normal Operation
		Amber	Flashing	Faulty
		Off /Black		Missing
5	FAN (F1~F6)	Green	Solid Light	Power On, Normal Operation
		Amber	Flashing	Faulty
		Off /Black		Missing

LED ports behavior

This section details the behavior of the SLX 9030 device port LEDs.

FIGURE 39 Port LEDs



SLX 9030 Switch LED Behavior for Each Port (1~48 Ethernet Ports - top to bottom) are as follows:

TABLE 14 SLX 9030 device LEDs behavior for ports 1–48

Speed, bps	LED indication	Color	Behavior	Description
10 G	Link/Act/Speed	Green	Solid	RJ-45 or SFP+ cable is correctly installed. Port has link and is operating at 10 Gbps

TABLE 14 SLX 9030 device LEDs behavior for ports 1–48 (continued)

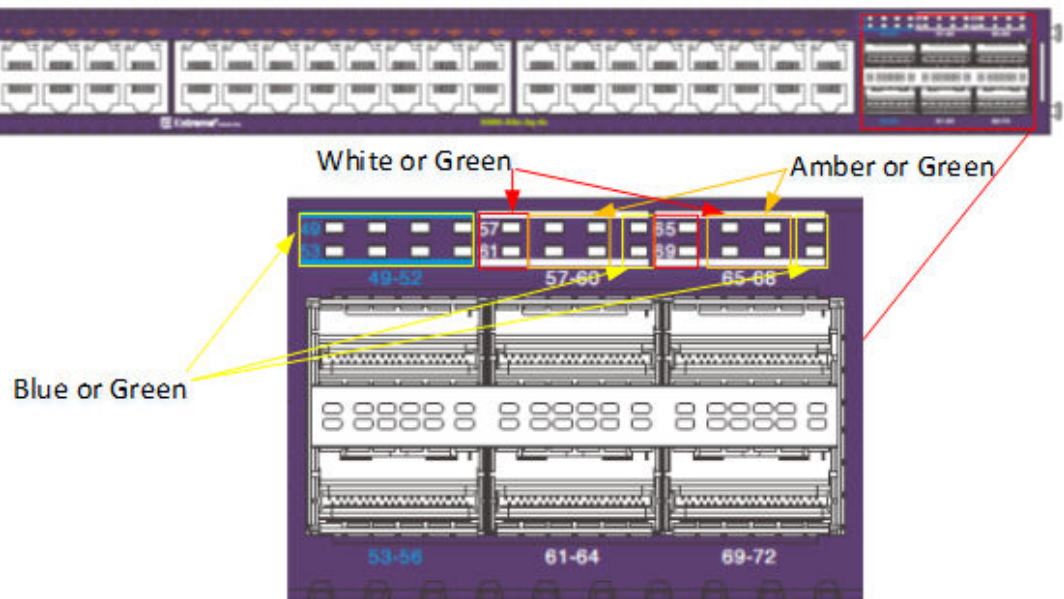
Speed, bps	LED indication	Color	Behavior	Description
			Blinking	Port is sending or receiving data at 10 Gbps
1 G/100 M		Amber	Solid	RJ-45 or SFP+ cable is correctly installed. Port has link and is operating at 10 Gbps or 100 Mbps
			Blinking	Port is sending or receiving data at 1 Gbps
Off			Light off	Port is disabled or link is down

The following table details the LED behavior for ports 49–52 (10 through 100 Gbps).

TABLE 15 SLX 9030 device LEDs behavior for ports 49–52

Speed, bps	LED indication	Color	Behavior	Description
100 G	Link/Act/Speed	White	Solid	There is a secure 100 G connection (or link)
			Blinking	Packet is transmitting or receiving
40 G		White	Solid	There is a secure 40 G connection (or link)
			Blinking	Packet is transmitting or receiving
25 or 10 G		Green	Solid	There is a secure 25 or 10 G connection (or link)
			Blinking	Packet is transmitting or receiving
Off			Light off	Port is disabled or link is down

FIGURE 40 Detail LED Definition for QSFP28 port



Power Supplies

• Power supply overview.....	83
• Precautions specific to power supplies.....	85
• Identifying the airflow direction.....	86
• Time and items required.....	86
• Replacing a power supply.....	86
• Inserting a new AC power supply	87
• Inserting a new DC power supply.....	88
• Grounding the SLX 9030/9030-T device.....	89

Power supply overview

The ExtremeSwitching SLX 9030/9030-T device supports alternating-current (AC) and direct-current (DC) power supplies. The SLX 9030/9030-T device is capable of running on one power supply and five fan assemblies. The second power supply and sixth fan assembly provide redundancy.

If the second power supply and sixth fan assembly slots are unused, you must cover them with filler panels.

NOTE

Extreme Networks recommends that the SLX 9030/9030-T device operate with two power supplies and six fan assemblies installed. If a power supply or fan assembly fails, it must be replaced as soon as possible.

NOTE

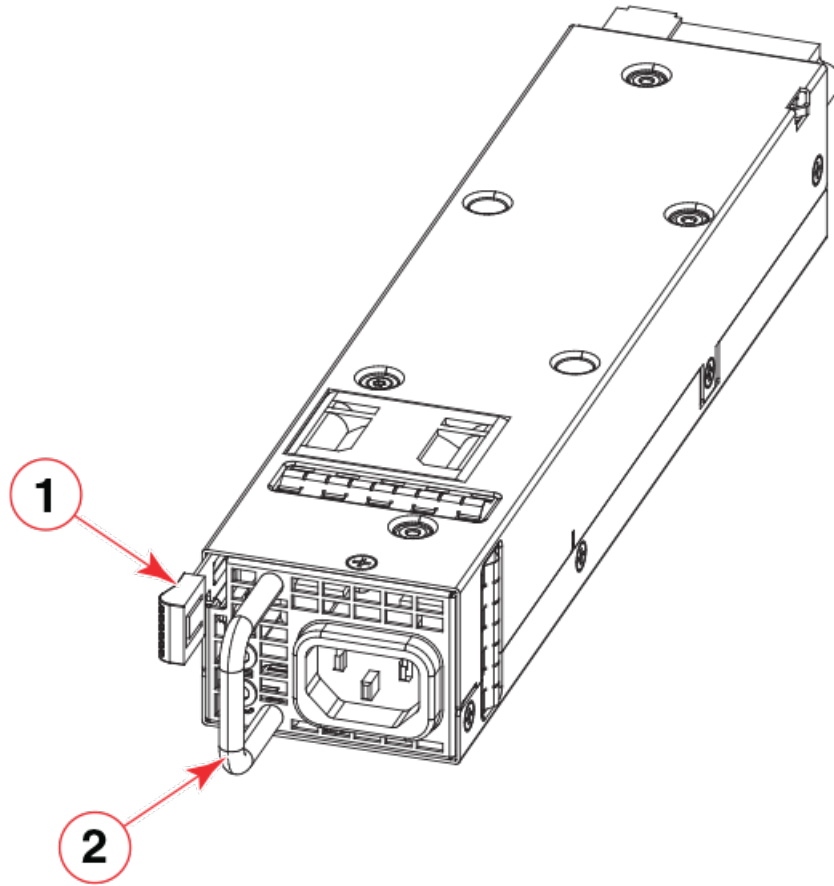
The SLX 9030 device will support AC PSUs and DC PSUs. However, these AC and DC PSUs cannot be mixed in the same device.

The power supplies in the SLX 9030/9030-T device chassis can be removed and replaced without special tools. The device can continue operating during the replacement.

The device supports the following types of power supplies:

- AC power supply with nonport-side air exhaust. This unit moves the air from the port-side to the nonport-side of the device.
- AC power supply with nonport-side air intake. This unit moves the air from the nonport-side to the port-side of the device.
- DC power supply with nonport-side air exhaust. This unit moves the air from the port-side to the nonport-side of the device.
- DC power supply with nonport-side air intake. This unit moves the air from the nonport-side to the port-side of the device.

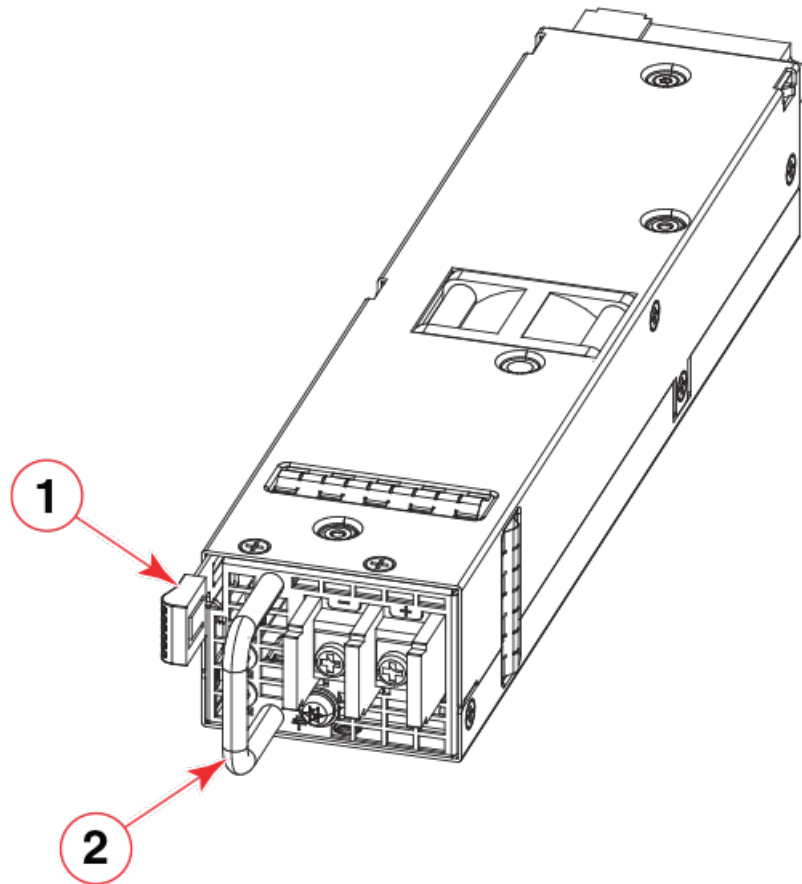
FIGURE 41 AC power supply



1. Release lever

2. Power supply handle

FIGURE 42 DC power supply



1. Release lever
2. Power supply handle

Precautions specific to power supplies



DANGER

Make sure that the power source circuits are properly grounded, then use the power cord supplied with the device to connect it to the power source.



DANGER

If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.



CAUTION

Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.



CAUTION

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."




CAUTION

If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.


Identifying the airflow direction

The power supply and fan assemblies are identified by the following airflow directions:

- **Intake power supply and fan assembly with an orange "I" label or without any label:** Pulls air from the nonport-side of the switch and exhausts it out the port side.

	<ul style="list-style-type: none">- Nonport-side air intake- Port-side air exhaust- Back-to-front (nonport-side to port-side) airflow- Part numbers ending with -R
---	---

- **Exhaust power supply and fan assembly with a green "E" label:** Pulls air from the port side of the switch and exhausts it out the nonport-side.

	<ul style="list-style-type: none">- Nonport-side air exhaust- Port-side air intake- Front-to-back (port-side to nonport-side) airflow- Part numbers ending with -F
---	---

Time and items required

Installing or removing and replacing a power supply should require less than five minutes to complete.

A new power supply (with the same airflow direction as the power supply being replaced) is required to replace a power supply.

The following items are required for the power supply replacement:

- New power supply unit or filler panel
- #2 Phillips screwdriver

Replacing a power supply

When installing or replacing a power supply unit, keep in mind the following:

- Power supplies can be swapped in or out while the device is running. The remaining power supply provides enough power for the device.

- The airflow direction of the power supply must match that of the installed fan assemblies. All must be either exhaust or intake.

NOTE

Power supplies are hot-swappable. However, they should be inserted or removed without a power cord being connected to a power source to avoid damage.

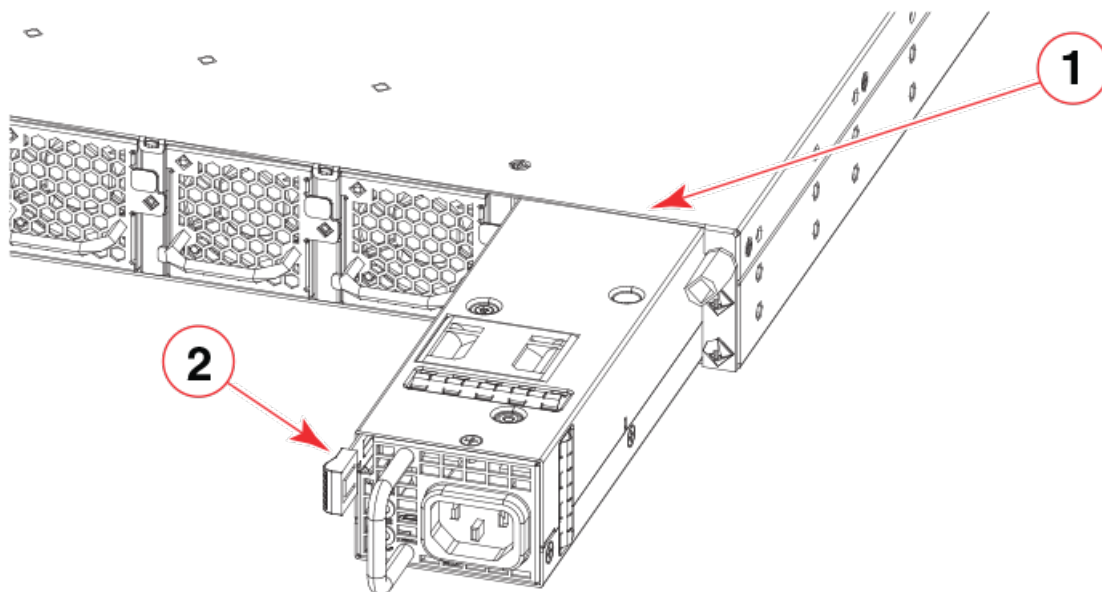
**CAUTION**

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."

Inserting a new AC power supply

Use the following steps to install an AC power supply in the SLX 9030 device.

FIGURE 43 Installing an AC power supply unit



1. Power supply slot

2. Release lever

- If replacing a power supply, remove the previously installed power supply from the appropriate slot by pressing the release lever and pulling the power supply handle.
- If installing a new power supply into a slot covered with a filler panel:
 - Press the release lever on the filler panel.
 - Remove the filler panel.
- Before opening the package that contains the power supply, touch the bag to the switch casing to discharge any potential static electricity. Extreme recommends using an ESD wrist strap during installation.
- Remove the power supply from the anti-static shielded bag.
- Holding the power supply level, guide it into the carrier rails on each side and gently push it all the way into the slot, ensuring that it firmly engages with the connector and the release lever clicks into its locked position.

When the SLX 9030/9030-T device is powered on, the LEDs on the power supply rear panel should light up green to confirm that the power supply is correctly installed and supplying power.

NOTE

If you do not install a power supply in a slot, you must keep the slot filler panel in place. If you run the device with an uncovered slot, the system will overheat.

Inserting a new DC power supply



CAUTION

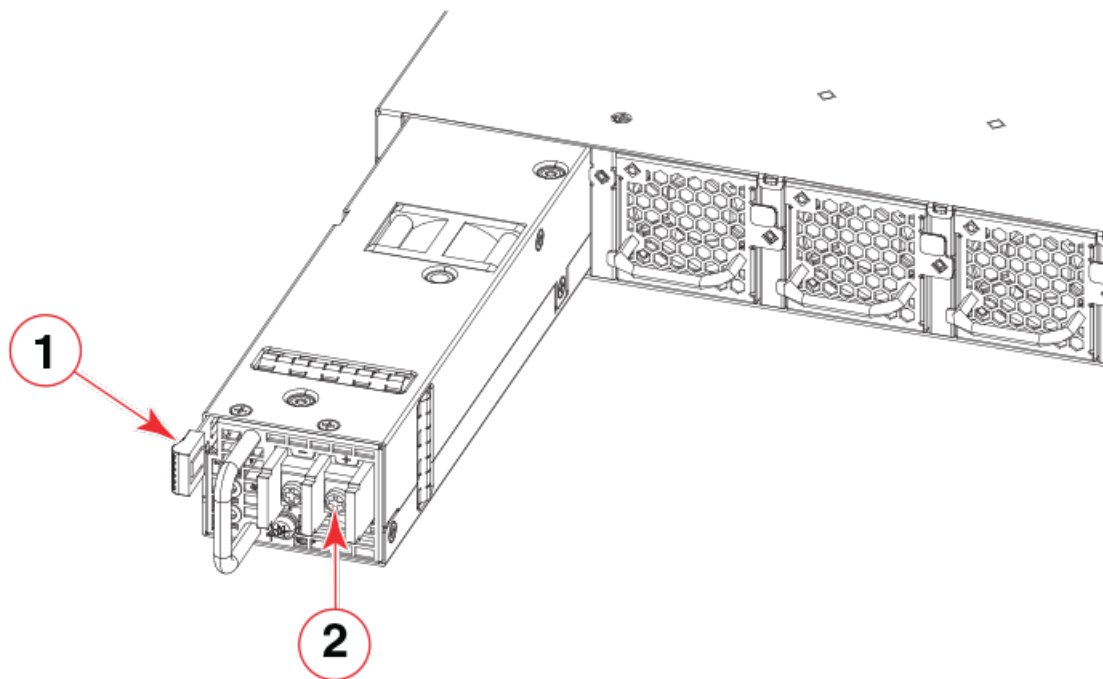
All devices with DC power supplies are intended for installation in restricted access areas only. A restricted access area is a location where access can be gained only by trained service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

NOTE

This equipment installation must meet NEC/CEC code requirements. Consult your local authorities for required regulations

Use the following steps to install an DC power supply in the SLX 9030/9030-T device.

FIGURE 44 Installing an DC power supply unit



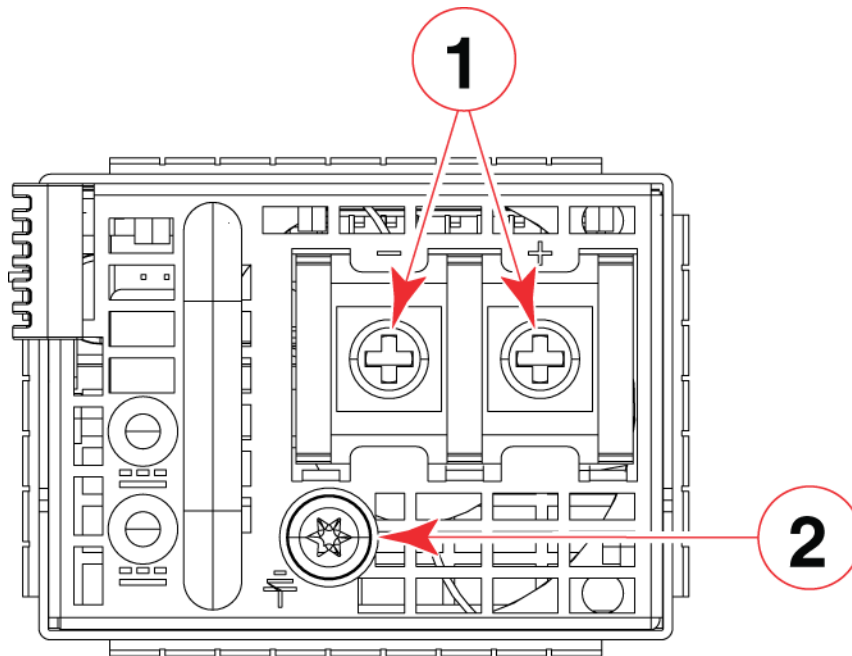
1. DC power supply terminals

2. Safety ground screw

1. Make sure that power is disconnected at the circuit breaker before proceeding.
2. Prepare the power and safety grounding wires using the appropriate size wire, crimp on ring lugs and heat shrink tube for all three wires. Due to the limited space for the safety ground wire, we recommend using a 90 angled lug such as:
 - TE Connectivity Solistrand "16-14HD 90 Ring 8", part number 184269-1 for 14 AWG wire
 - PIDG 12-10 Ring #8, 90-DEG, part number 1958340-1 for 12 or 10 AWG wire

3. Remove the previously installed power supply from the appropriate slot by pressing the release lever and pulling the power supply handle.
4. Before opening the package that contains the DC power supply, touch the bag of the switch casing to discharge any potential static electricity. It is recommended to use an ESD wrist strap during installation.
5. Remove the DC power supply from the anti-static shielded bag.
6. Remove the DC terminals plastic cover.
7. Attach the safety grounding wire to the power supply using the safety ground screw.
8. Attach the DC power supply wires to the power supply DC power terminals, matching the polarity. Refer to Figure 46.

FIGURE 45 DC power supply wiring terminals



- 1 - DC power terminals
- 2 - Safety ground screw

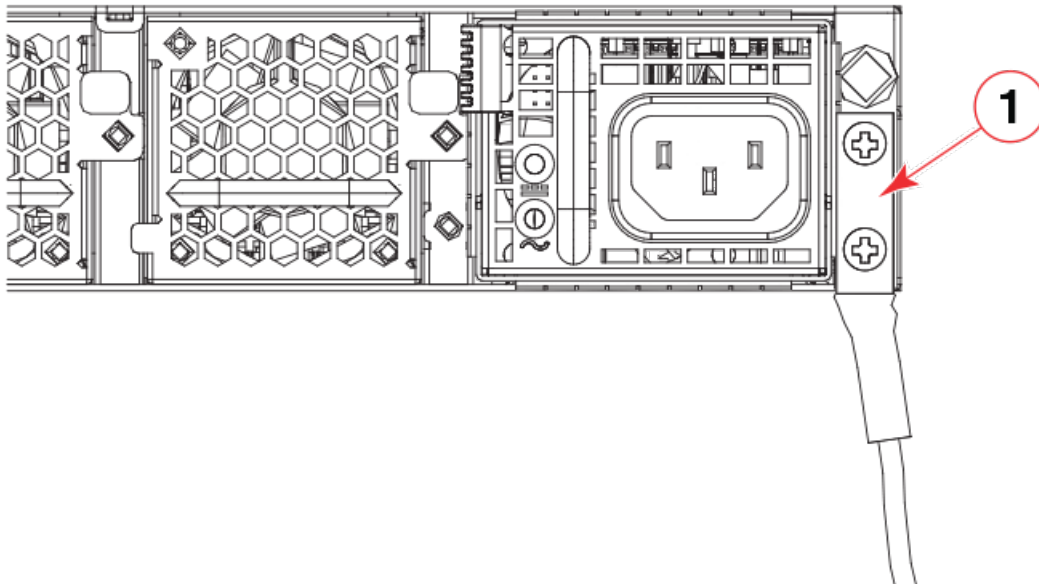
9. Make sure the screws are tight with no wire touching the ground screw.
10. Using the handle on the power supply, hold the power supply level and guide it into the power supply slot. Gently push the power supply all the way into the slot, ensuring that it firmly engages with the connector and the release lever clicks into its locked position.

When the SLX 9030/9030-T device is powered on, the power LED on the front of the device should turn green to confirm that the power supply is correctly installed and supplying power. Refer to [LED ports behavior](#) on page 79.

Grounding the SLX 9030/9030-T device

The rear panel of the SLX 9030/9030-T device includes a dual-screw grounding terminal. The surface area around this terminal is not painted to provide a good electrical connection. Before connecting power to the device, the grounding terminal must be connected to ground to ensure proper operation and to meet electromagnetic interference (EMI) and safety requirements.

FIGURE 46 Connecting the grounding terminal



1. Grounding terminal

NOTE

The grounding lug must be sized according to NEC/CEC requirements. A typical installation would require:

1. Lug, copper, suitable wire size, #10 2-hole, 5/8" centers. For #10 ga. Wire, example lugs are:
 - Panduit LCD10-10AF-L
 - Pencom EL1244
 - Hardware Specialties 912302
2. Screw, 10-32, 1/2", qty 2
3. Washer, #10, external locking, qty 2

Perform the following steps to connect to the grounding terminal.

1. Ensure that the rack in which the SLX 9030/9030-T device is mounted is properly grounded and in compliance with local regulations.
2. Ensure that there is a good electrical connection to the grounding point on the rack (no paint or isolating surface treatment).
3. Crimp the included grounding lug to a grounding wire of at least 12 American Wire Gauge (AWG). The 12 AWG wire and grounding lug should be crimped together using a proper tool.
4. Attach the 12 AWG stranded copper wire to the grounding terminal on the SLX 9030/9030-T device using the screws included in the grounding kit.
5. Attach the grounding wire to a grounding point.

NOTE

The terminal for the connection of a grounding conductor is not to be used with an aluminum conductor.

Fan Assemblies

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- Precautions specific to fan assemblies..... 92
- Identifying the airflow direction..... 93
- Times and items required..... 93
- Replacing a fan assembly..... 93
- Inserting a new fan assembly..... 93

Fan assembly overview

The ExtremeSwitching SLX 9030/9030-T device includes six redundant, hot-swappable fan units. However, the switch is capable of running on one power supply and five fans. The second power supply and sixth fan provide redundancy.

If the second power supply and sixth fan slots are unused, you must cover them with filler panels.

NOTE

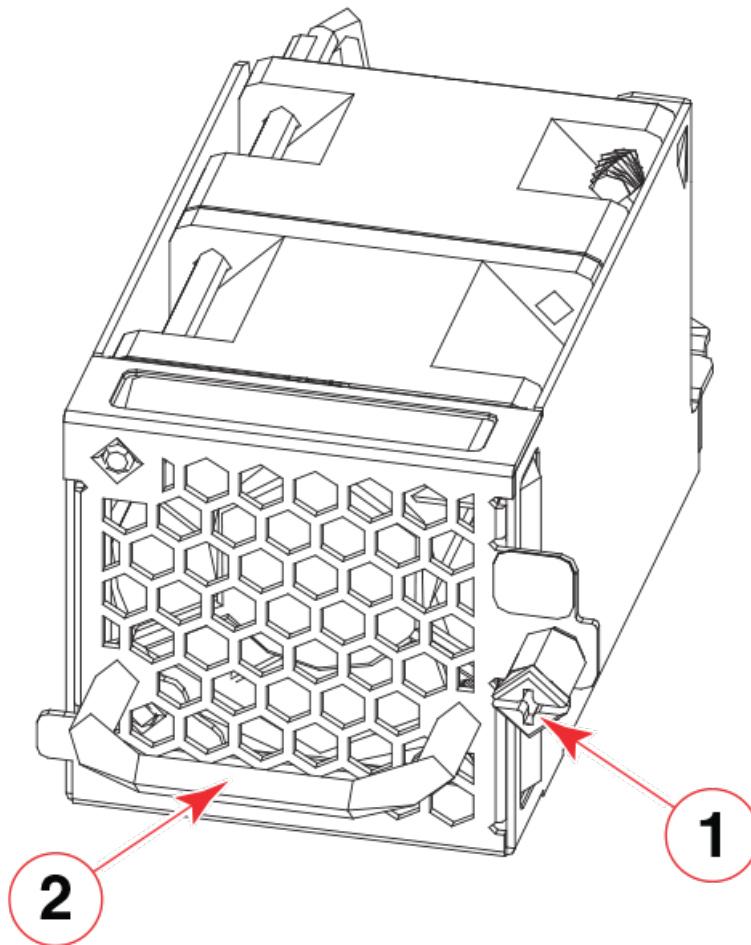
Extreme Networks recommends that the SLX 9030/9030-T device operate with two power supplies and six fan assemblies installed. If a power supply or fan assembly fails, it must be replaced as soon as possible.

The fan assemblies in the SLX 9030/9030-T device chassis can be removed and replaced without special tools. The device can continue operating during the replacement.

The device supports the following types of fan assemblies:

- Fan assembly with nonport-side air exhaust. This unit moves the air from the port-side to the nonport-side of the device.
- Fan assembly supply with nonport-side air intake. This unit moves the air from the nonport-side to the port-side of the device.

FIGURE 47 Fan assembly



1. Captive screw

2. Fan assembly handle

Precautions specific to fan assemblies



DANGER

Be careful not to accidentally insert your fingers into the fan tray while removing it from the chassis. The fan may still be spinning at a high speed.



CAUTION

Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.



CAUTION

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."




CAUTION

If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.


Identifying the airflow direction

The power supply and fan assemblies are identified by the following airflow directions:

- **Intake power supply and fan assembly with an orange "I" label or without any label:** Pulls air from the nonport-side of the switch and exhausts it out the port side.

	<ul style="list-style-type: none"> - Nonport-side air intake - Port-side air exhaust - Back-to-front (nonport-side to port-side) airflow - Part numbers ending with -R
---	--

- **Exhaust power supply and fan assembly with a green "E" label:** Pulls air from the port side of the switch and exhausts it out the nonport-side.

	<ul style="list-style-type: none"> - Nonport-side air exhaust - Port-side air intake - Front-to-back (port-side to nonport-side) airflow - Part numbers ending with -F
---	--

Times and items required

Installing or removing and replacing a fan assembly should require less than five minutes to complete.

The following items are required to replace a fan assembly:

- New fan assembly (must have the same airflow direction as the fan assembly being replaced)
- #1 Phillips screwdriver

Replacing a fan assembly

When installing or replacing a fan assembly unit, keep in mind the following:

- Fan assemblies can be swapped in or out while the device is running. The remaining fan assemblies provide enough airflow for the device.
- The airflow direction of the fan assembly must match that of the installed fan trays. All must be either exhaust or intake.



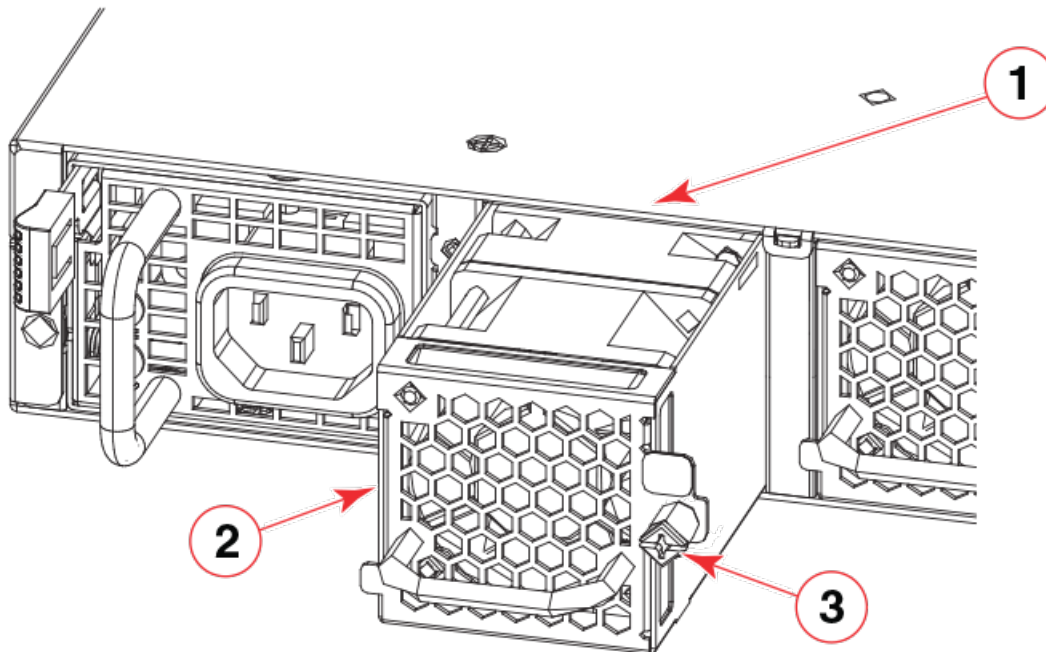
CAUTION

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."

Inserting a new fan assembly

Use the following steps to install a fan assembly in the SLX 9030/9030-T switch.

FIGURE 48 Installing a fan assembly



- 1. Fan assembly slot
- 2. Fan assembly
- 3. Captive screw

1. If replacing a fan assembly:
 - a. Using a Phillips screwdriver, unscrew the captive screw on the fan assembly.
 - b. Remove the fan assembly from the chassis by pulling the handle on the fan assembly out and away from the chassis.
 - c. Ensure that the replacement fan assembly has the same part number and airflow label as the fan assembly being replaced.
2. If installing a new fan assembly into a slot covered with a filler panel:
 - a. Using a Phillips screwdriver, unscrew the captive screw on the filler panel.
 - b. Remove the filler panel.
3. Before opening the package that contains the new fan assembly, touch the bag to the switch casing to discharge any potential static electricity. It is recommended that you wear an ESD wrist strap during installation.
4. Remove the fan assembly from the anti-static shielded bag.

NOTE

Do not force the installation. If the fan assembly does not slide in easily, ensure that it is correctly oriented before continuing.

5. Holding the fan assembly level, guide it into the carrier rails on each side and gently push it all the way into the slot, ensuring that it firmly engages with the connector.
6. When you are sure the fan assembly has properly engaged the connector, tighten the captive screw to secure the fan assembly in the slot.

NOTE

The fans are controlled automatically by the device.

When a fan assembly is installed in a slot, the power LED on the fan assembly should turn on green to confirm that the fan assembly is correctly installed and running. Refer to "LED activity interpretation" on page 45.

**CAUTION**

If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

ExtremeSwitching SLX 9030 Technical Specifications

SLX 9030 Switch Specifications

System component	Description
Enclosure	Chassis-mountable on a desktop, or in a standard 2 or 4-post rack kit
Ports	SLX 9030-48S and SLX 9030-48T Switch Models <ul style="list-style-type: none"> • 48 1Gb/10Gb SFP+ ports • 2 10Gb/40Gb QSFP+ ports • 4 10Gb/25 Gb/40 Gb/100Gb QSFP28 ports • 1x Serial console port RJ-45 • 1x 10/100/1000BASE-T out-of-band management port • Micro-USB Type A storage port
Power supplies	SLX 9030-48S and SLX 9030-48T Switch Models <ul style="list-style-type: none"> • Modular 770 W AC power supply (up to two PSUs) • Modular 1100 W DC power supply (up to two PSUs) • Front-Back and Back-Front airflow options
Fan assemblies	SLX 9030-48S and SLX 9030-48T Switch Models <ul style="list-style-type: none"> • 6 Fan modules • Front-Back and Back-Front airflow options
Dimensions	SLX 9030-48S and SLX 9030-48T Switch Models 17.4in W / 19.2in D / 1.7in H (44.1cm / 48.8cm / 4.3cm)
Performance	SLX 9030-48S and SLX 9030-48T Switch Models Line rate 1.76 Tbps Switching Capacity with Average Latency: <ul style="list-style-type: none"> • 800 ns for SLX 9030-48S • 2.3 μsec for SLX 9030-48T
CPU and Memory	SLX 9030-48S and SLX 9030-48T Switch Models <ul style="list-style-type: none"> • 2.4GHz Quad core CPU • 8GBE DDR3 ECC memory • 32GBE SSD memory
Packet Buffers	SLX 9030-48S and SLX 9030-48T Switch Models 12 Mb
Operating Conditions	SLX 9030-48S and SLX 9030-48T Switch Models <ul style="list-style-type: none"> • 0 ° - 45°C operation • 10 % to 95% relative humidity, non-condensing • 0 - 3000 meters altitude • Shock (half sine): 98 m/ s² (10 G), 11ms, 9 shocks • Random vibration: 3 to 50 0 Hz at 1.5 G rms

Power and Heat Dissipation

Switch Model	Minimum Heat Dissipation (BTU/hr) (Idle, no ports linked)	Minimum Power Consumption (Watts) (Idle, no ports linked)	Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic)	Maximum Power Consumption (Watts) (Fans high, all ports 100% traffic)	
SLX 9030-48S AC	AC 282 BTU/hr	83 W	1124 BTU/hr	329 W	
SLX 9030-48S DC	311BTU/hr	91W	1178 BTU/hr	345 W	
SLX 9030-48T AC	425 BTU/hr	125 W	1271BTU/hr	373 W	
SLX 9030-48T DC	421BTU/hr	123 W	1315 BTU/hr	385 W	
	1 PSU		2 PSU		

Power Supply Specifications

PSU Specifications/Part Numbers	770W AC PSU / 10960/10961	1100W DC PSU / 10962/10963
Dimensions	2.3 in W x 1.6 in H x 14.1in D (5.9 cm x 4.1cm x 35.9 cm)	2.3 in W x 1.6 in H x 14.1in D (5.9 cm x 4.1cm x 35.9 cm)
Weight	2.2 lb (1Kg)	2.2 lb (1Kg)
Voltage Input Range	100 - 240 VAC +/- 10%	100 - 240 VAC +/- 10%
Line Frequency Range	50 - 60 Hz +/- 5%	N/A
PSU Input Socket	IEC 320 C14	Terminal Block
Power Cord Input Plug	IEC 320 C13	N/A
Operating Conditions	0 ° - 45°C Operation	0 ° - 45°C Operation

Acoustics Specifications

Switch Model	Bystander Sound Pressure	Declared Sound Power
SLX 9030-48S (Front -Back Airflow)	55.4 dB(A) up to 30 °C 61.3 dB(A) up to 40 °C 76.8 dB(A) @ 45°C (max)	6.9 bels up to 30 °C 7.5 bels up to 40 °C 9.0 bels @ 45°C (max)
SLX 9030-48S (Back-Front Airflow) 5	6.9 dB(A) up to 30 °C 63.3 dB(A) up to 40 °C 77.4 dB(A) @ 45°C (max)	7.1bels up to 30 °C 7.7 bels up to 40 °C 9.1bels @ 45°C (max)
SLX 9030-48T (Front -Back Airflow)	58 dB(A) up to 25°C 72.8 dB(A) up to 35°C 76.3 dB(A) @ 45°C (max)	7.2 bels up to 25°C 8.7 bels up to 35°C 9.0 bels @ 45°C (max)
SLX 9030-48T (Back-Front Airflow)	59.1dB(A) up to 25°C 72.5 dB(A) up to 35°C 77.5 dB(A) @ 45°C (max)	7.3 bels up to 25°C 8.7 bels up to 35°C 9.0 bels @ 45°C (max)

SLX 9030 Software Specifications

Software Specifications	Description
Connector Options	<ul style="list-style-type: none"> • 10/1 GbE SFP+ • 40GbE QSFP+ • 100GbE QSFP-28 • Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45 • Console management: RJ45 serial port and USB type-C port with serial communication device class support • Storage: USB port, standard-A plug
Maximum MAC addresses	Up to 80,000
Maximum VLANS	4,096
Maximum ACLs	2048
Maximum members in a standard LAG	32
Maximum per-port priority pause level	8
Maximum switches an mLAG can span	2
Maximum IPv4 unicast routes	128,000
Maximum IPv6 unicast routes	15,000
Maximum jumbo frame size	9,126 bytes
QoS priority queues (per port)	8

Ethernet

System component	Description	Maximum ports supported
QSFP-28 ports	The QSFP-28 ports can support 10Gb/25Gb/40Gb/100Gb	4
SFP+ ports	The SFP+ ports can support 1Gb/10Gb interfaces (SLX 9030-48S). User port numbering is from left to right and top to bottom.	48
10GBASE-T ports	RJ-45 port with 1Gb/10Gb speeds (SLX-9030-48T) User port numbering is from left to right and top to bottom.	48
Ethernet management port	RJ-45 port with 10Mb/100Mb/1Gb speeds	1

LEDs

System component	Description
Interface module LEDs	<ul style="list-style-type: none"> • Power: Green - Power OK, off - No power • Status: Green- Status OK, Amber - Error; Off - Unexpected error • Link status (1 LED per physical port): Green (Solid) - Link is up; Green (Blinking) - Link is up and running traffic; Off - No link
Power supply LEDs	<ul style="list-style-type: none"> • LED 1 and LED 2: Steady Green - Input and output voltages are within range • LED 1: Off and LED 2: Flashing Yellow - Power supply does not have incoming power and is not providing power to the device, or the Input AC voltage is out of range. • LED 1: Green and LED 2: Yellow - Output voltage is out of range

System component	Description
Fan module LEDs	<ul style="list-style-type: none"> LED 1: Green and LED 2: Flashing Yellow/Green - Over-temperature warning or fan error Power (Fan) LED: No light (LED is off) - Fan assembly does not have power. Steady green - Fan assembly has power. Status (Fan) LED: No light (LED is off) - Fan assembly is either healthy or does not have power. Steady amber - Fan assembly is being initialized or has a failure (full or partial).

Other

System component	Description
Serial Cable	RJ-45 console cable
RJ-45 to DB9 adapter	1 (RJ-45 port to female DB9 connector)
AC power cord, power clip	For both units

Weight and physical dimensions

The SLX 9030/9030-T Switch is 1 RU and 19.2" in depth.

Model	Dimensions (with Fan FRU)	Weight (with 6 x Fan FRUs and 2 x PSUs without optics)
SLX 9030/9030-T Switch	445 x 43.7 x 451.5 mm	8.96 Kg (19.712 lbs)
Fan tray	42.0 x 41.2 x 94.6 mm	0.18 Kg (.396 lb.)
Power Supply Unit	54.4 x 40.0 x 236.6 mm	0.76 Kg (1.672 lbs)

Data port specifications (Ethernet)

System component	Description	Maximum ports supported
QSFP28 ports	100 GbE QSFP28 ports	6
SFP+ ports	The SFP+ ports can support 10GbE/1GbE interfaces. There are 48 x SFP+ ports.	48
Ethernet management port	RJ-45 port with 10/100/1000 Mbps auto-negotiating capability	1

Serial port specifications (pinout RJ-45)

Pin	Signal	Description
1	Not supported	N/A
2	Not supported	N/A
3	RXD	Receive data
4	GND	Logic ground
5	Not supported	N/A

Pin	Signal	Description
6	TXD	Transmit data
7	Not supported	N/A
8	Not supported	N/A

Serial port specifications (pinout - mini-USB)

Pin	Signal	Description
1	Reserved	Not used
2	UART0_RX	Debug port (data received by SLX)
3	UART0_TX	Console port (data transmitted by SLX)
4	Reserved	Not used
5	GND	Ground

Serial port specifications (protocol)

Parameter	Value
Baud	115200
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Memory specifications

Parameter	Type	Size
Main memory	DDR3	8 GB
Boot flash	NOR Flash	32 MB
SSD	M.2 SATA III (2 slots)	32GB

Regulatory compliance (EMC)

- FCC Part 15, Subpart B
- EN 55024
- EM 55032 (CE Mark) (Class A)
- ICES-003
- VCCI
- EN 300 386
- CNS 13438

- KN 32
- KN 35
- TCVN 7189
- EN 61000-3-2
- EN 61000-3-3
- GB 9254
- CISPR 32
- 2014/30/EU
- AS/NZS CISPR32 (Australia) (Class A)

Regulatory compliance (safety)

- EN/UL 60825
- EN/UL/CSA/IEC 60950-1
- GB 4943.1
- CNS 14336-1
- 2014/35/EU

Regulatory compliance (environmental)

- 2011/65/EU - Restriction of the use of certain hazardous substance in electrical and electronic equipment (EU RoHS).
- 2012/19/EU - Waste electrical and electronic equipment (EU WEEE).
- 94/62/EC - packaging and packaging waste (EU).
- 2006/66/EC - batteries and accumulators and waste batteries and accumulators (EU battery directive).
- 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH).
- Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 - U.S. Conflict Minerals.
- 30/2011/TT-BCT - Vietnam circular.
- SJ/T 11363-2006 Requirements for Concentration Limits for Certain Hazardous Substances in EIPs (China).
- SJ/T 11364-2006 Marking for the Control of Pollution Caused by EIPs (China).

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CE statement

ATTENTION

This is a Class A product. In a domestic environment, this product might cause radio interference, and the user might be required to take corrective measures.

The standards compliance label on this device contains the CE mark which indicates that this system conforms to the provisions of the following European Council directives, laws, and standards:

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Low Voltage Directive (LVD) 2014/35/EU
- EN 55032/EN 55024 (European Immunity Requirements)
 - EN61000-3-2/IEC61000-3-2 (European and Japanese Harmonics Spec)
 - EN61000-3-3

China ROHS

Refer to the latest revision of the China ROHS document (P/N 53-1000428-xx) which ships with the product.

BSMI statement (Taiwan)

警告使用者：

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

Warning:

Europe and Australia (CISPR 32 Class A Warning)

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC warning (US only)

This equipment has been tested and complies with the limits for a Class A computing 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, might 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 the user's own expense.

Germany statement

Machine noise information regulation - 3. GPSGV, the highest sound pressure level value is 70.0 dB(A) in accordance with EN ISO 7779.

Maschinenlärminformations-Verordnung - 3. GPSGV, der höchste Schalldruckpegel beträgt 70.0 dB(A) gemäss EN ISO 7779.

KCC statement (Republic of Korea)

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

Class A device (Broadcasting Communication Device for Office Use): This device obtained EMC registration for office use (Class A), and may be used in places other than home. Sellers and/or users need to take note of this.

VCCI statement

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance might arise. When such trouble occurs, the user might be required to take corrective actions.

Japan power cord



注意 - 添付の電源コードを他の装置や用途に使用しない

添付の電源コードは本装置に接続し、使用することを目的として設計され、その安全性が確認されているものです。決して他の装置や用途に使用しないでください。火災や感電の原因となる恐れがあります。

English translation of above statement

ATTENTION: Never use the power cord packed with your equipment for other products.

Cautions and Danger Notices

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Cautions

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.

Ein Vorsichtinweis warnt Sie vor potenziellen Personengefahren oder Beschädigung der Hardware, Firmware, Software oder auch vor einem möglichen Datenverlust

Un message de mise en garde vous alerte sur des situations pouvant présenter un risque potentiel de dommages corporels ou de dommages matériels, logiciels ou de perte de données.

Un mensaje de precaución le alerta de situaciones que pueden resultar peligrosas para usted o causar daños en el hardware, el firmware, el software o los datos.

General cautions



CAUTION

Changes or modifications made to this device that are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

VORSICHT	Falls dieses Gerät verändert oder modifiziert wird, ohne die ausdrückliche Genehmigung der für die Einhaltung der Anforderungen verantwortlichen Partei einzuholen, kann dem Benutzer der weitere Betrieb des Gerätes untersagt werden.
MISE EN GARDE	Les éventuelles modifications apportées à cet équipement sans avoir été expressément approuvées par la partie responsable d'en évaluer la conformité sont susceptibles d'annuler le droit de l'utilisateur à utiliser cet équipement.
PRECAUCIÓN	Si se realizan cambios o modificaciones en este dispositivo sin la autorización expresa de la parte responsable del cumplimiento de las normas, la licencia del usuario para operar este equipo puede quedar anulada.



CAUTION

Disassembling any part of the power supply and fan assembly voids the warranty and regulatory certifications. There are no user-serviceable parts inside the power supply and fan assembly.

VORSICHT	Das Zerlegen von Netzteilen oder Lüftereinheiten macht die Garantie und die gesetzlichen Zertifizierungen ungültig. Die Netzteile und Lüftereinheiten enthalten keine Teile, die vom Benutzer gewartet werden können.
MISE EN GARDE	Le démontage d'une pièce du bloc d'alimentation ou du ventilateur annule la garantie et les certificats de conformité. Aucune pièce du bloc de l'alimentation ou du ventilateur ne peut être réparée par l'utilisateur.
PRECAUCIÓN	Si se desmonta cualquier pieza del módulo de fuente de alimentación y ventiladores, la garantía y las certificaciones normativas quedan anuladas. En el interior del módulo de fuente de alimentación y ventiladores no hay piezas que pueda reparar el usuario.



CAUTION

Make sure the airflow around the front, and back of the device is not restricted.

VORSICHT	Stellen Sie sicher, dass an der Vorderseite, den Seiten und an der Rückseite der Luftstrom nicht behindert wird.
MISE EN GARDE	Vérifiez que rien ne restreint la circulation d'air devant, derrière et sur les côtés du dispositif et qu'elle peut se faire librement.

PRECAUCIÓN	Asegúrese de que el flujo de aire en las inmediaciones de las partes anterior, laterales y posterior del instrumento no esté restringido.
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**CAUTION**

Ensure that the airflow direction of the power supply unit matches that of the installed fan tray. The power supplies and fan trays are clearly labeled with either a green arrow with an "E", or an orange arrow with an "I."

VORSICHT	Vergewissern Sie sich, dass die Luftstromrichtung des Netzteils der eingebauten Lüftereinheit entspricht. Die Netzteile und Lüftereinheiten sind eindeutig mit einem grünen Pfeil und dem Buchstaben "E" oder einem orangefarbenen Pfeil mit dem Buchstaben "I" gekennzeichnet.
MISE EN GARDE	Veillez à ce que le sens de circulation de l'air du bloc d'alimentation corresponde à celui du tiroir de ventilation installé. Les blocs d'alimentation et les tiroirs de ventilation sont étiquetés d'une flèche verte avec un "E" ou d'une flèche orange avec un "I".
PRECAUCIÓN	Asegúrese de que la dirección del flujo de aire de la unidad de alimentación se corresponda con la de la bandeja del ventilador instalada. Los dispositivos de alimentación y las bandejas del ventilador están etiquetadas claramente con una flecha verde y una "E" o con una flecha naranja y una "I".

**CAUTION**

To protect the serial port from damage, keep the cover on the port when not in use.

VORSICHT	Um den seriellen Anschluss vor Beschädigungen zu schützen, sollten Sie die Abdeckung am Anschluss belassen, wenn er nicht verwendet wird.
MISE EN GARDE	Mettre le bouchon de protection sur le port série lorsqu'il ne sert pas pour éviter de l'endommager.
PRECAUCIÓN	Para evitar que se dañe el puerto serie, mantenga la cubierta colocada sobre el puerto cuando no lo utilice.

**CAUTION**

Never leave tools inside the chassis.

VORSICHT	Lassen Sie keine Werkzeuge im Chassis zurück.
MISE EN GARDE	Ne laissez jamais d'outils à l'intérieur du châssis
PRECAUCIÓN	No deje nunca herramientas en el interior del chasis.

**CAUTION**

If you do not install a module or a power supply in a slot, you must keep the slot filler panel in place. If you run the chassis with an uncovered slot, the system will overheat.

VORSICHT	Falls kein Modul oder Netzteil im Steckplatz installiert wird, muss die Steckplatztafel angebracht werden. Wenn ein Steckplatz nicht abgedeckt wird, läuft das System heiß.
MISE EN GARDE	Si vous n'installez pas de module ou de bloc d'alimentation dans un slot, vous devez laisser le panneau du slot en place. Si vous faites fonctionner le châssis avec un slot découvert, le système surchauffera.
PRECAUCIÓN	Si no instala un módulo o un fuente de alimentación en la ranura, deberá mantener el panel de ranuras en su lugar. Si pone en funcionamiento el chasis con una ranura descubierta, el sistema sufrirá sobrecalentamiento.

**CAUTION**

Use the screws specified in the procedure. Using longer screws can damage the device.

VORSICHT	Verwenden Sie die in der Anleitung aufgeführten Schrauben. Mit längeren Schrauben wird das Gerät möglicherweise beschädigt.
MISE EN GARDE	Utilisez les vis mentionnées dans les instructions. L'utilisation de vis plus longues peut endommager l'appareil.
PRECAUCIÓN	Utilice los tornillos especificados en el procedimiento. Si utiliza tornillos de mayor longitud, podría dañar el dispositivo.

**CAUTION**

Do not install the device in an environment where the operating ambient temperature might exceed 50°C (122°F).

VORSICHT	Das Gerät darf nicht in einer Umgebung mit einer Umgebungsbetriebstemperatur von über 50°C (122°F) installiert werden.
MISE EN GARDE	N'installez pas le dispositif dans un environnement où la température d'exploitation ambiante risque de dépasser 50°C (122°F).
PRECAUCIÓN	No instale el instrumento en un entorno en el que la temperatura ambiente de operación pueda exceder los 50°C (122°F).

**CAUTION**

The device must be turned off and disconnected from the fabric during this procedure.

VORSICHT	Bei diesem Verfahren muss das Gerät ausgeschaltet und von der Fabric getrennt sein.
MISE EN GARDE	Au cours de cette procédure, l'appareil doit être éteint et déconnecté du réseau.
PRECAUCIÓN	El dispositivo debe estar apagado y desconectado del fabric durante este procedimiento.

**CAUTION**

All devices with DC power supplies are intended for installation in restricted access areas only. A restricted access area is a location where access can be gained only by trained 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.

VORSICHT	Alle Geräte mit DC-Netzteil sind nur für die Installation in Bereichen mit beschränktem Zugang gedacht. Ein Bereich mit beschränktem Zugang ist ein Ort, zu dem nur ausgebildetes Wartungspersonal mit Spezialwerkzeug, Schloss und Schlüssel oder anderen Sicherheitsvorrichtungen Zugang hat. Dieser Zugang wird von für den Bereich zuständigen Personen überwacht.
MISE EN GARDE	Tous les équipements dotés de sources d'alimentation C.C. sont destinés à être installés uniquement dans des zones à accès réglementé. Une zone à accès réglementé est une zone dont l'accès n'est possible qu'au personnel de service qualifié utilisant un verrou, une clé ou un outil spécial, ou d'autres moyens de sécurité, et qui est contrôlée par les autorités responsables du site.
PRECAUCIÓN	Todos los dispositivos con fuentes de alimentación de corriente continua (CC) han sido diseñados únicamente para su instalación en áreas restringidas/ zonas de acceso restringido. Se entiende como área de acceso restringido un lugar al que solo puede acceder personal de servicio mediante el uso de una herramienta especial, llave y cerrojo u otro medio de seguridad similar, y que esté controlado por la autoridad responsable de esa ubicación.

**CAUTION**

Static electricity can damage the chassis and other electronic devices. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

VORSICHT	Statische Elektrizität kann das System und andere elektronische Geräte beschädigen. Um Schäden zu vermeiden, entnehmen Sie elektrostatisch empfindliche Geräte erst aus deren antistatischer Schutzhülle, wenn Sie bereit für den Einbau sind.
MISE EN GARDE	L'électricité statique peut endommager le châssis et les autres appareils électroniques. Pour éviter tout dommage, conservez les appareils sensibles à l'électricité statique dans leur emballage protecteur tant qu'ils n'ont pas été installés.
PRECAUCIÓN	La electricidad estática puede dañar el chasis y otros dispositivos electrónicos. A fin de impedir que se produzcan daños, conserve los dispositivos susceptibles de dañarse con la electricidad estática dentro de los paquetes protectores hasta que esté listo para instalarlos.

**CAUTION**

Use a separate branch circuit for each power cord, which provides redundancy in case one of the circuits fails.

VORSICHT	Es empfiehlt sich die Installation eines separaten Stromkreisweiges für jede Elektroschnur als Redundanz im Fall des Ausfalls eines Stromkreises.
MISE EN GARDE	Utilisez un circuit de dérivation différent pour chaque cordon d'alimentation ainsi, il y aura un circuit redondant en cas de panne d'un des circuits.

PRECAUCIÓN	Use un circuito derivado separado para cada cordón de alimentación, con lo que se proporcionará redundancia en caso de que uno de los circuitos falle.
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CAUTION

Ensure that the device does not overload the power circuits, wiring, and over-current protection. To determine the possibility of overloading the supply circuits, add the ampere (amp) ratings of all devices installed on the same circuit as the device. Compare this total with the rating limit for the circuit. The maximum ampere ratings are usually printed on the devices near the input power connectors.

VORSICHT	Stromkreise, Verdrahtung und Überlastschutz dürfen nicht durch das Gerät überbelastet werden. Addieren Sie die Nennstromleistung (in Ampere) aller Geräte, die am selben Stromkreis wie das Gerät installiert sind. Somit können Sie feststellen, ob die Gefahr einer Überbelastung der Versorgungsstromkreise vorliegt. Vergleichen Sie diese Summe mit der Nennstromgrenze des Stromkreises. Die Höchstnennströme (in Ampere) stehen normalerweise auf der Geräterückseite neben den Eingangsstromanschlüssen.
MISE EN GARDE	Assurez-vous que le dispositif ne risque pas de surcharger les circuits d'alimentation, le câblage et la protection de surintensité. Pour déterminer le risque de surcharge des circuits d'alimentation, additionnez l'intensité nominale (ampères) de tous les dispositifs installés sur le même circuit que le dispositif en question. Comparez alors ce total avec la limite de charge du circuit. L'intensité nominale maximum en ampères est généralement imprimée sur chaque dispositif près des connecteurs d'entrée d'alimentation.
PRECAUCIÓN	Verifique que el instrumento no sobrecargue los circuitos de corriente, el cableado y la protección para sobrecargas. Para determinar la posibilidad de sobrecarga en los circuitos de suministros, añada las capacidades nominales de corriente (amp) de todos los instrumentos instalados en el mismo circuito que el instrumento. Compare esta suma con el límite nominal para el circuito. Las capacidades nominales de corriente máximas están generalmente impresas en los instrumentos, cerca de los conectores de corriente de entrada.



CAUTION

Before plugging a cable into any port, be sure to discharge the voltage stored on the cable by touching the electrical contacts to ground surface.

VORSICHT	Bevor Sie ein Kabel in einen Anschluss einstecken, entladen Sie jegliche im Kabel vorhandene elektrische Spannung, indem Sie mit den elektrischen Kontakten eine geerdete Oberfläche berühren.
MISE EN GARDE	Avant de brancher un câble à un port, assurez-vous de décharger la tension du câble en reliant les contacts électriques à la terre.
PRECAUCIÓN	Antes de conectar un cable en cualquier puerto, asegúrese de descargar la tensión acumulada en el cable tocando la superficie de conexión a tierra con los contactos eléctricos.



CAUTION

To prevent damage to the chassis and components, never attempt to lift the chassis using the fan or power supply handles. These handles were not designed to support the weight of the chassis.

VORSICHT	Alle Geräte mit Wechselstromquellen sind nur zur Installation in Sperrbereichen bestimmt. Ein Sperrbereich ist ein Ort, zu dem nur Wartungspersonal mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer anderen Schutzvorrichtung Zugang hat.
MISE EN GARDE	Pour éviter d'endommager le châssis et les composants, ne jamais tenter de soulever le châssis par les poignées du ventilateur ou de l'alimentation. Ces poignées n'ont pas été conçues pour supporter le poids du châssis.
PRECAUCIÓN	Para prevenir daños al chasis y a los componentes, nunca intente levantar el chasis usando las asas de la fuente de alimentación o del ventilador. Tales asas no han sido diseñadas para soportar el peso del chasis.

Danger Notices

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Ein Gefahrenhinweis warnt vor Bedingungen oder Situationen die tödlich sein können oder Sie extrem gefährden können. Sicherheitsetiketten sind direkt auf den jeweiligen Produkten angebracht um vor diesen Bedingungen und Situationen zu warnen.

Un énoncé de danger indique des conditions ou des situations potentiellement mortelles ou extrêmement dangereuses. Des étiquettes de sécurité sont posées directement sur le produit et vous avertissent de ces conditions ou situations.

Una advertencia de peligro indica condiciones o situaciones que pueden resultar potencialmente letales o extremadamente peligrosas. También habrá etiquetas de seguridad pegadas directamente sobre los productos para advertir de estas condiciones o situaciones.

General dangers



DANGER

The procedures in this manual are for qualified service personnel.

GEFAHR	Die Vorgehensweisen in diesem Handbuch sind für qualifiziertes Servicepersonal bestimmt.
DANGER	Les procédures décrites dans ce manuel doivent être effectuées par un personnel de maintenance qualifié.
PELIGRO	Los procedimientos de este manual deben llevarlos a cabo técnicos cualificados.



DANGER

Batteries used for RTC/NVRAM backup are not located in operator-access areas. There is a risk of explosion if a battery is replace by an incorrect type. Dispose of used components with batteries according to local ordinance and regulations.

GEFAHR	Die für die RTC/NVRAM-Sicherung verwendeten Batterien, befinden sich nicht in für den Bediener zugänglichen Bereichen. Bei Ersetzen der Batterie durch einen falschen Typ besteht Explosionsgefahr. Entsorgen Sie gebrauchte Komponenten mit Batterien gemäß den lokalen Auflagen und Vorschriften.
DANGER	Les batteries utilisées pour la sauvegarde de l'horloge et de la mémoire ne sont pas remplaçables par l'opérateur. Il y a risque d'explosion si la batterie est remplacée par une d'un type incompatible. Jetez/recyclez les batteries conformément aux normes locales.
PELIGRO	Las baterías usadas para respaldo de RTC/NVRAM no se encuentran en áreas de acceso del operador. Existe riesgo de explosión si una batería es remplazada por un tipo incorrecto. Deshágase de los componentes usados con las baterías según las políticas y regulaciones locales.



DANGER

To avoid high voltage shock, do not open the device while the power is on.

GEFAHR	Das eingeschaltete Gerät darf nicht geöffnet werden, da andernfalls das Risiko eines Stromschlags mit Hochspannung besteht.
DANGER	Afin d'éviter tout choc électrique, n'ouvrez pas l'appareil lorsqu'il est sous tension.
PELIGRO	Para evitar una descarga de alto voltaje, no abra el dispositivo mientras esté encendido.



DANGER

Make sure the rack housing the device is adequately secured to prevent it from becoming unstable or falling over.

GEFAHR	Stellen Sie sicher, dass das Gestell für die Unterbringung des Geräts auf angemessene Weise gesichert ist, so dass das Gestell oder der Schrank nicht wackeln oder umfallen kann.
DANGER	Vérifiez que le bâti abritant le dispositif est bien fixé afin qu'il ne devienne pas instable ou qu'il ne risque pas de tomber.
PELIGRO	Verifique que el bastidor que alberga el instrumento está asegurado correctamente para evitar que pueda hacerse inestable o que caiga.



DANGER

Make sure that the power source circuits are properly grounded, then use the power cord supplied with the device to connect it to the power source.

GEFAHR	Stellen Sie sicher, dass die Stromkreise ordnungsgemäß geerdet sind. Benutzen Sie dann das mit dem Gerät gelieferte Stromkabel, um es an die Stromquelle anzuschließen.
DANGER	Vérifiez que les circuits de sources d'alimentation sont bien mis à la terre, puis utilisez le cordon d'alimentation fourni avec le dispositif pour le connecter à la source d'alimentation.
PELIGRO	Verifique que circuitos de la fuente de corriente están conectados a tierra correctamente; luego use el cordón de potencia suministrado con el instrumento para conectarlo a la fuente de corriente



DANGER

Before beginning the installation, see the precautions in "Power precautions."

GEFAHR	Vor der Installation siehe Vorsichtsmaßnahmen unter "Power Precautions" (Vorsichtsmaßnahmen in Bezug auf elektrische Ablagen).
DANGER	Avant de commencer l'installation, consultez les précautions décrites dans "Power Precautions" (Précautions quant à l'alimentation).
PELIGRO	Antes de comenzar la instalación, consulte las precauciones en la sección "Power Precautions" (Precauciones sobre corriente).



DANGER

Be careful not to accidentally insert your fingers into the fan tray while removing it from the chassis. The fan may still be spinning at a high speed.

GEFAHR	Die Finger dürfen nicht versehentlich in das Ventilatorblech gesteckt werden, wenn dieses vom Gehäuse abgenommen wird. Der Ventilator kann sich unter Umständen noch mit hoher Geschwindigkeit drehen.
DANGER	Faites attention de ne pas insérer vos doigts accidentellement dans le boîtier du ventilateur lorsque vous le retirez du châssis. Il est possible que le ventilateur tourne encore à grande vitesse.
PELIGRO	Procure no insertar los dedos accidentalmente en la bandeja del ventilador cuando esté desmontando el chasis. El ventilador podría estar girando a gran velocidad.



DANGER

For safety reasons, the ESD wrist strap should contain a series 1 megaohm resistor.

GEFAHR	Aus Sicherheitsgründen sollte ein EGB-Armband zum Schutz von elektronischen gefährdeten Bauelementen mit einem 1 Megaohm-Reihenwiderstand ausgestattet sein.
DANGER	Pour des raisons de sécurité, la dragonne ESD doit contenir une résistance de série 1 méga ohm.
PELIGRO	Por razones de seguridad, la correa de muñeca ESD deberá contener un resistor en serie de 1 mega ohmio.



DANGER

If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.

GEFAHR	Falls für die Installation ein anderes Stromkabel erforderlich ist (wenn das mit dem Gerät gelieferte Kabel nicht passt), müssen Sie sicherstellen, dass Sie ein Stromkabel mit dem Siegel einer Sicherheitsbehörde verwenden, die für die Zertifizierung von Stromkabeln in Ihrem Land zuständig ist. Das Siegel ist Ihre Garantie, dass das Stromkabel sicher mit Ihrem Gerät verwendet werden kann.
DANGER	Si l'installation nécessite un cordon d'alimentation autre que celui fourni avec le dispositif, assurez-vous d'utiliser un cordon d'alimentation portant la marque de l'organisation responsable de la sécurité qui définit les normes et réglementations pour les cordons d'alimentation dans votre pays. Cette marque vous assure que vous pouvez utiliser le cordon d'alimentation avec le dispositif en toute sécurité.

PELIGRO	Si la instalación requiere un cordón de corriente distinto al que se ha suministrado con el instrumento, verifique que usa un cordón de corriente que venga con la marca de la agencia de seguridad que defina las regulaciones para cordones de corriente en su país. Esta marca será su garantía de que el cordón de corriente puede ser utilizado con seguridad con el instrumento.
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**DANGER**

Disconnect the power cord from all power sources to completely remove power from the device.

GEFAHR	Ziehen Sie das Stromkabel aus allen Stromquellen, um sicherzustellen, dass dem Gerät kein Strom zugeführt wird.
DANGER	Débranchez le cordon d'alimentation de toutes les sources d'alimentation pour couper complètement l'alimentation du dispositif.
PELIGRO	Para desconectar completamente la corriente del instrumento, desconecte el cordón de corriente de todas las fuentes de corriente.

**DANGER**

This device might have more than one power cord. To reduce the risk of electric shock, disconnect all power cords before servicing.

GEFAHR	Dieses System ist möglicherweise mit mehr als einem Netzkabel ausgestattet. Trennen Sie stets die Verbindung aller Netzkabel, bevor Sie Wartungsarbeiten durchführen, um die Gefahr eines Stromschlags auszuschließen.
DANGER	Ce commutateur peut comporter plusieurs cordons d'alimentation. Pour réduire les risques de choc électrique, déconnectez tous les cordons d'alimentation avant d'effectuer l'entretien de l'appareil.
PELIGRO	Este conmutador podría tener más de un cable de alimentación. Para reducir el riesgo de sufrir una descarga eléctrica, desconecte todos los cables de alimentación antes de proceder con la reparación.

**DANGER**

Use safe lifting practices when moving the product.

GEFAHR	Beim Bewegen des Produktes ist auf eine sichere Hubtechnik zu achten.
DANGER	Utiliser des techniques de levage sûres pour déplacer le produit.
PELIGRO	Tenga mucho cuidado al levantar el producto para moverlo

**DANGER**

Mount the devices you install in a rack as low as possible. Place the heaviest device at the bottom and progressively place lighter devices above.

GEFAHR	Montieren Sie die Geräte im Gestell so tief wie möglich. Platzieren Sie das schwerste Gerät ganz unten, während leichtere Geräte je nach Gewicht (je schwerer desto tiefer) darüber untergebracht werden.
DANGER	Montez les dispositifs que vous installez dans un bâti aussi bas que possible. Placez le dispositif le plus lourd en bas et le plus léger en haut, en plaçant tous les dispositifs progressivement de bas en haut du plus lourd au plus léger.
PELIGRO	Monte los instrumentos que instale en un bastidor lo más bajos posible. Ponga el instrumento más pesado en la parte inferior y los instrumentos progresivamente más livianos más arriba.

**DANGER**

All fiber-optic interfaces use Class 1 lasers.

GEFAHR	Alle Glasfaser-Schnittstellen verwenden Laser der Klasse 1.
DANGER	Toutes les interfaces en fibre optique utilisent des lasers de classe 1.
PELIGRO	Todas las interfaces de fibra óptica utilizan láser de clase 1.



DANGER

Laser Radiation. Do Not View Directly with Optical Instruments. Class 1M Laser Products.

GEFAHR	Laserstrahlung! Schauen Sie nicht direkt mit optischen Instrumenten in den Laserstrahl herein. Klasse 1M Laserprodukte.
DANGER	Rayonnement de laser. Ne regardez pas directement avec des instruments optiques. Produits de laser de classe 1M.
PELIGRO	Radiacion de Laser. No vea directamente con Instrumentos Opticos. Clase 1M de Productos de Laser.
警告	レーザ放射 光学器具で直接ビームを見ないこと クラス1 M レーザ製品



DANGER

Use only optical transceivers that are qualified by Extreme Networks, Inc. and comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I, and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

GEFAHR	Verwenden Sie nur optische Transceiver, die von Extreme Networks, Inc. zugelassen sind und die die Anforderungen gemäß FDA Class 1 Radiation Performance Standards in 21 CFR, Unterkapitel I, sowie IEC 60825 und EN60825 erfüllen. Optische Produkte, die diese Normen nicht erfüllen, können Strahlen aussenden, die für das menschliche Auge gefährlich sind.
DANGER	Utilisez uniquement des émetteurs-récepteurs optiques certifiés par Extreme Networks, Inc. et conformes aux exigences sur la puissance de rayonnement de catégorie 1 de la FDA définies au sous-chapitre 21 CFR I et à les normes IEC 60825 et EN60825. Les produits optiques non-conformes à ces normes sont susceptibles d'émettre une lumière dangereuse pour les yeux.
PELIGRO	Utilice sólo transceptores ópticos aprobados por Extreme Networks, Inc. y que cumplan con las normas IEC 60825 y EN60825, y con los estándares de rendimiento Clase 1 de FDA definidos en el subcapítulo I de 21 CFR. Los productos ópticos que no cumplan con estos estándares pueden emitir luz dañina para los ojos.