



Extreme 8820 Hardware Installation Guide

9037376-00 Rev. AA
February 2023



Copyright © 2023 Extreme Networks, Inc. All rights reserved.

Legal Notice

Extreme Networks, Inc. reserves the right to make changes in specifications and other information contained in this document and its website without prior notice. The reader should in all cases consult representatives of Extreme Networks to determine whether any such changes have been made.

The hardware, firmware, software or any specifications described or referred to in this document are subject to change without notice.

Trademarks

Extreme Networks and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries.

All other names (including any product names) mentioned in this document are the property of their respective owners and may be trademarks or registered trademarks of their respective companies/owners.

For additional information on Extreme Networks trademarks, see: www.extremenetworks.com/company/legal/trademarks

Open Source Declarations

Some software files have been licensed under certain open source or third-party licenses.

End-user license agreements and open source declarations can be found at: <https://www.extremenetworks.com/support/policies/open-source-declaration/>



Table of Contents

Preface.....	6
Text Conventions.....	6
Documentation and Training.....	7
Help and Support.....	8
Subscribe to Product Announcements.....	8
Send Feedback.....	8
Extreme 8820 Series Overview.....	10
Management.....	10
Fan Modules.....	11
Power Supplies.....	11
Operating Temperatures.....	11
Feature Licensing.....	11
Extreme 8820-40C Switch Features.....	11
Extreme 8820-80C Switch Features.....	13
Power Supplies for Use with Your Switch.....	15
Precautions specific to power supplies.....	15
1600 W AC Power Supplies.....	16
1600 W DC Power Supplies.....	16
Fan Modules for Use with Your Switch.....	17
Precautions specific to fan Modules.....	17
Extreme 8820-40C Fan Modules.....	18
Extreme 8820-80C Fan Modules.....	18
Site Preparation.....	20
Plan Your Site.....	20
Operating Environment Requirements.....	21
Meet Building and Electrical Codes.....	21
Set up the Wiring Closet.....	22
Control the Temperature.....	22
Control the Humidity Level.....	23
Protect Your System from ESD (Electrostatic Discharge).....	23
Rack Specifications and Recommendations.....	24
Mechanical Recommendations for the Rack.....	24
Ground the Rack.....	24
Provide Adequate Space for the Rack.....	24
Secure the Rack.....	25
Meet Power Requirements.....	25
Power Supply Requirements.....	25
Requirements for Power Cords.....	26
UPS (Uninterruptible Power Supply) Requirements.....	26

Follow Applicable Industry Standards.....	27
Install Your Switch.....	29
Safety Considerations for Installation.....	29
What You Will Need for the Installation.....	30
Attach Your Device to a Rack or Cabinet.....	30
Attach the Device to a Four-Post Rack.....	31
Attach the Device to a Two-Post Rack.....	34
Install Optional Components.....	40
Pluggable Transceiver Modules.....	40
Optical Cables.....	40
Install Internal Power Supplies.....	40
Install a 1600 W Internal AC Power Supply.....	40
Install a 1600 W Internal DC Power Supply.....	43
Turn on the Device.....	46
Connect Network Interface Cables.....	47
Activate and Verify Your Switch.....	48
Establish a Serial Connection.....	48
Configure the Switch for Use.....	49
Monitor the Device.....	50
System Status LEDs.....	50
RJ-45 Management Port LEDs.....	51
QSFP28 Port LEDs.....	52
Fan LEDs.....	54
Power Supply LEDs.....	54
1600 W AC Power Supply LEDs.....	54
1600 W DC Power Supply LEDs.....	55
Remove and Replace Components.....	56
Replacing Internal Power Supplies.....	56
Replace Fan Modules.....	56
Identify the Airflow Direction.....	57
Replace Fan Modules.....	57
Change Airflow Direction.....	58
Remove the Switch from the Rack.....	61
Remove or Reposition a Device from a Four-Post Rack.....	61
Remove a Device from a Two-Post Rack.....	64
Extreme 8820 Series Technical Specifications.....	65
Extreme 8820 Software Specifications.....	65
Weights and Physical Dimensions.....	66
Fan and Acoustic Noise.....	68
Power Options.....	69
Power and Heat Dissipation.....	69
Mean Time Between Failures (MTBF).....	69
CPU, Memory.....	70
Standards.....	71
Environmental Standards.....	73
Power Cord Requirements for AC-Powered Switches and AC Power Supplies.....	73
1600 W Power Supply Technical Specifications.....	74

Safety and Regulatory Information.....77

- General Safety Precautions.....77
- Considerations Before Installing.....78
- Maintenance Safety.....79
- Fiber Optic Ports and Optical Safety.....79
- Cable Routing for LAN Systems.....80
- Install Power Supply Units and Connect Power.....80
- Select Power Supply Cords.....81
- Battery Notice.....82
- Battery Warning - Taiwan.....82
- EMC Warnings.....82
 - Taiwan BSMI Warning.....82
 - China CQC Warning.....83
- Japan (VCCI Class A).....83
- Korea EMC Statement.....83

Index.....84



Preface

Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings






Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2: Text

Convention	Description
<code>screen displays</code>	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words <i>enter</i> and <i>type</i>	When you see the word <i>enter</i> in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says <i>type</i> .
Key names	Key names are written in boldface, for example Ctrl or Esc . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
<i>Words in italicized type</i>	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
<i>italic text</i>	Italic text indicates variable content.
[]	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, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member</i> [<i>member</i> . . .].
\	In command examples, the backslash indicates a “soft” line break. When 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 and software compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

[Other resources](#) such as white papers, data sheets, and case studies

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit www.extremenetworks.com/education/.

Help and Support

If you require assistance, contact Extreme Networks using one of the following methods:

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2826. For the support phone number in your country, visit: www.extremenetworks.com/support/contact

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

Subscribe to Product Announcements

You can subscribe to email notifications for product and software release announcements, Field Notices, and Vulnerability Notices.

1. Go to [The Hub](#).
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

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

Send Feedback

The Information Development team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, 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.
- Broken links or usability issues.

To send feedback, do either of the following:

- 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.



Extreme 8820 Series Overview

[Extreme 8820-40C Switch Features](#) on page 11

[Extreme 8820-80C Switch Features](#) on page 13

Each Extreme 8820 device is a high density, fixed form factor switch and router with 80 x 100 GbE or 40 x 100 GbE ports to deliver the scale and performance needed to address the explosive growth in network bandwidth, devices, and services.

This platform provides carrier-class advanced features that leverage proven Extreme Networks routing, MPLS, Carrier Ethernet, VXLAN overlay technology, and Dual Stack 1Pv4/1Pv6 functionality, deployed in the most demanding service providers, internet exchange points (IXPs) and large enterprise data centers.

Management

An RJ45 serial console port on the front panel of the Extreme 8820 Series enables you to connect a terminal and perform local management. The Extreme 8820-80C models have two RJ45 Ethernet management ports on the front panel, which can be used to connect the system to an out of band management network for administration. The Extreme 8820-40C models have only one RJ45 Ethernet management port on the front panel. Alternatively, you can use an Ethernet cable to connect this port directly to a laptop to view and locally manage the switch configuration. The Ethernet management port supports 10/100/1000 Mbps speeds.

After you connect, 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.

Table 4: 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>Extreme SLX-OS Management Configuration Guide</i>
REST or NETCONF/YANG APIs.	Ethernet connection	Yes	<i>Extreme SLX-OS Management Configuration Guide</i>
Standard SNMP applications	Ethernet or serial connection	N/A	<i>Extreme SLX-OS Management Configuration Guide</i>

There is also a USB 2.0 Type A port on the front panel labeled USB that can host removable devices like flash drives.

Fan Modules

Hot-swappable fan modules that provide either front-to-back or back-to-front airflow for switch cooling are available for the Extreme 8820. Extreme 8820-40C models support six fan modules. Extreme 8820-80C models support four fan modules. The fan slots on all models are located on the rear panel. Switch fans are not responsible for cooling the power supplies; power supplies have integrated cooling fans that operate independently of the switch fan. The direction of the airflow in the fans and power supplies must be the same. For more information about the fans used in the Extreme 8820 Series switches, see [Fan Modules for Use with Your Switch](#) on page 17.

Fans are ordered separately for base models 8820-40C and 8820-80C. Fans are included with other models.

Power Supplies

Hot swappable 1600 W AC or DC power supplies are available to power the Extreme 8820. The power supplies have integrated cooling fans that operate independently of the switch fans. The fans provide either front-to-back or back-to-front airflow. The direction of the airflow in the power supplies and the fans must be the same. Extreme 8820-40C models support two power supplies, and Extreme 8820-80C models support four power supplies. The power supplies can be AC, DC, or mixed. The power supply slots on all models are located on the rear panel. For more information about the power supplies used in the Extreme 8820 Series, see [Power Supplies for Use with Your Switch](#) on page 15.

Power supplies are ordered separately for base models 8820-40C and 8820-80C. Power supplies are included with other models.

Operating Temperatures

The operating temperatures and operating altitude for front-to-back airflow models are 0°C to 40°C (32°F to 104°F) up to 6,000 ft (1800m). The operating temperatures and operating altitude for back-to-front airflow models are 0°C to 25°C (32°F to 77°F) up to 6,000 ft (1800m).

Feature Licensing

Table 5: Extreme 8820 Series License Option

Part number	Description
8000-PRMR-LIC-P	Extreme 8820-40C and Extreme 8820-80C Advanced Feature License for BGP-EVPN and Integrated Application Hosting

For information about licensing options for SLX-OS support for the Extreme 8820 Series, see *Extreme SLX-OS Software Licensing Guide*.

Extreme 8820-40C Switch Features

The Extreme 8820-40C Series includes the following models:

8820-40C

The 8820-40C base switch includes six unused fan slots and two unused power supply slots. Fan modules and power supply modules must be ordered separately.

8820-40C-AC-F

The 8820-40C-AC-F switch includes six fan modules and two AC power supplies. Airflow for both the fan modules and the power supplies modules is front-to-back.

8820-40C-AC-R

The 8820-40C-AC-R switch includes six fan modules and two AC power supplies. Airflow for both the fan modules and the power supplies modules is back-to-front.

8820-40C-DC-F

The 8820-40C-DC-F switch includes six fan modules and two DC power supplies. Airflow for both the fan modules and the power supplies modules is front-to-back.

8820-40C-DC-R

The 8820-40C-DC-R switch includes six fan modules and two DC power supplies. Airflow for both the fan modules and the power supplies modules is back-to-front.

The front panel of the Extreme 8820 Series switch includes:

- 40 10/25/40/100Gb QSFP28 ports
- 1 Serial console RJ-45 port
- 1 10/100/1000BASE-T out-of-band management port
- 1 Type A USB storage port
- 4 Status LEDs

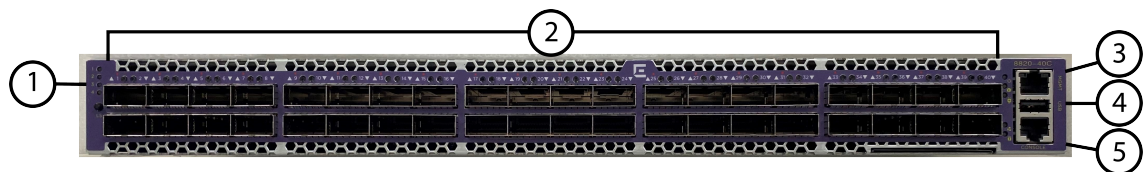


Figure 1: Extreme 8820-40C Series Front Panel

1 = Status LEDs	2 = 10/25/40/100Gb QSFP28 ports
3 = 10/100/1000BASE-T out-of-band management port	4 = Type A USB storage port
5 = Serial console RJ-45 port	

The rear panel of the switch includes:

- 6 fan modules
- 2 power supply modules

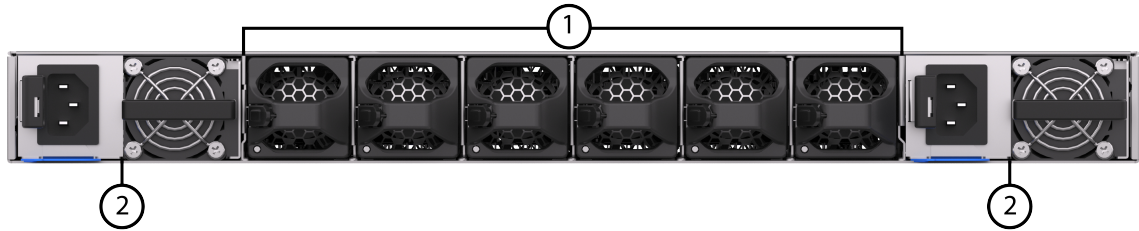


Figure 2: Extreme 8820-40C Series Rear Panel

1 = fan modules	2 = power supplies
-----------------	--------------------

Extreme 8820-80C Switch Features

The Extreme 8820-80C Series includes the following models:

8820-80C

The 8820-80C base switch includes four unused fan slots and four unused power supply slots. Fan modules and power supply modules must be ordered separately.

8820-80C-AC-F

The 8820-80C-AC-F switch includes four fan modules and four AC power supplies. Airflow for both the fan modules and the power supplies modules is front-to-back.

8820-80C-AC-R

The 8820-80C-AC-R switch includes four fan modules and four AC power supplies. Airflow for both the fan modules and the power supplies modules is back-to-front.

8820-80C-DC-F

The 8820-80C-DC-F switch includes four fan modules and four DC power supplies. Airflow for both the fan modules and the power supplies modules is front-to-back.

8820-80C-DC-R

The 8820-80C-DC-R switch includes four fan modules and four DC power supplies. Airflow for both the fan modules and the power supplies modules is back-to-front.

The front panel of the Extreme 8820 Series switch includes:

- 80 10/25/40/100Gb QSFP28 ports
- 1 Serial console RJ-45 port
- 2 10/100/1000BASE-T out-of-band management port
- 1 Type A USB storage port
- 4 Status LEDs

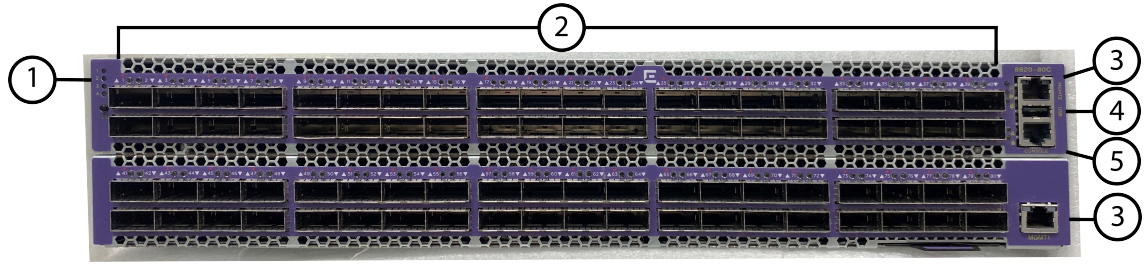


Figure 3: Extreme 8820-80C Series Front Panel

1 = Status LEDs	2 = 10/25/40/100Gb QSFP28 ports
3 = 10/100/1000BASE-T out-of-band management port	4 = Type A USB storage port
5 = Serial console RJ-45 port	

The rear panel of the switch includes:

- 4 fan modules
- 4 power supply modules

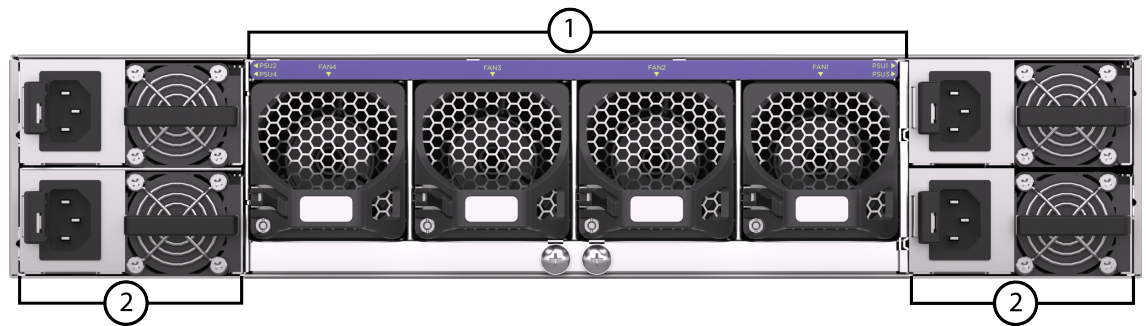


Figure 4: Extreme 8820-80C Series Rear Panel

1 = fan modules	2 = power supplies
-----------------	--------------------



Power Supplies for Use with Your Switch

[Precautions specific to power supplies](#) on page 15

[1600 W AC Power Supplies](#) on page 16

[1600 W DC Power Supplies](#) on page 16

Extreme 8820 Series switches run with replaceable internal power supply modules that provide all of the power needed for the switch to operate. You can remove one power supply module without interrupting the switch's operation. Supported power supply configurations for Extreme 8820-40C models include two 1600 W AC power supply modules or two 1600 W DC power supply modules. Supported power supply configurations for Extreme 8820-80C models include four 1600 W AC power supply modules or four 1600 W DC power supply modules.

Power supply modules have integrated cooling fans that operate independently of the switch fans, and are available with front-to-back or back-to-front airflow. The direction of the airflow in both power supply modules must be in the same direction, and must also be the in same direction of the airflow in the fan modules.

Power supply modules are ordered separately for base models Extreme 8820-40C and Extreme 8820-80C. Power supply modules are included with other models.

Precautions specific to power supplies



Warning

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.



Warning

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.

1600 W AC Power Supplies

Two 1600 W AC power supply options, with front-to-back or back-to-front airflow, are available for the Extreme 8820.

- 1600W AC power supply - front-to-back airflow (part no. XN-ACPWR-1600W-F)
- 1600W AC power supply - back-to-front airflow (part no. XN-ACPWR-1600W-R)

**Note**

AC power input cords are not provided with AC power supplies. You can order an appropriate cord from Extreme Networks or from your local supplier. The power cord must meet the requirements listed in [Power Cord Requirements for AC-Powered Switches and AC Power Supplies](#) on page 73 .

For information on installing or replacing an AC power supply, see [Install a 1600 W Internal AC Power Supply](#) on page 40.

LEDs on the 1600 W AC power supply provide information on the unit's operational status. See [1600 W AC Power Supply LEDs](#) on page 54 for details.

1600 W DC Power Supplies

Two 1600 W DC power supply options, with front-to-back or back-to-front airflow, are available for the Extreme 8820.

- 1600W DC power supply - front-to-back airflow (part no. XN-DCPWR-1600W-F)
- 1600W DC power supply - back-to-front airflow (part no. XN-DCPWR-1600W-R)

For information on installing or replacing a DC power supply, see [Install a 1600 W Internal DC Power Supply](#) on page 43.

LEDs on the 1600 W DC power supply provide information on the unit's operational status. See [1600 W DC Power Supply LEDs](#) on page 55 for details.



Fan Modules for Use with Your Switch

[Precautions specific to fan Modules on page 17](#)

[Extreme 8820-40C Fan Modules on page 18](#)

[Extreme 8820-80C Fan Modules on page 18](#)

Extreme 8820 Series switches run with replaceable internal fan modules that provide the cooling needed for the switch to operate. The Extreme 8820-40C models can include up to six redundant, hot-swappable fan modules. The Extreme 8820-80C models can include up to four redundant, hot-swappable fan modules. The fan modules in the switch chassis can be removed and replaced without special tools. The device can continue operating during the replacement.

Switch fans are not responsible for cooling the power supplies; power supplies have integrated cooling fans that operate independently of the switch fan. The direction of the airflow in the fans and power supplies must be the same.

Fan modules are ordered separately for base models Extreme 8820-40C and Extreme 8820-80C. Fan modules are included with other models.

Precautions specific to fan Modules



Warning

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.

Extreme 8820-40C Fan Modules

Two fan module options, with front-to-back or back-to-front airflow, are available for the Extreme 8820-40C models.

- 8820-40C fan unit with front-to-back airflow - (part no. XN-FAN-003-F)
- 8820-40C fan unit with back-to-front airflow - (part no. XN-FAN-003-R)

For information on installing or replacing a fan module, see [Replace Fan Modules](#) on page 56.

LEDs on the fan module provide information on the unit's operational status. See [Monitor the Device](#) on page 50 for details.

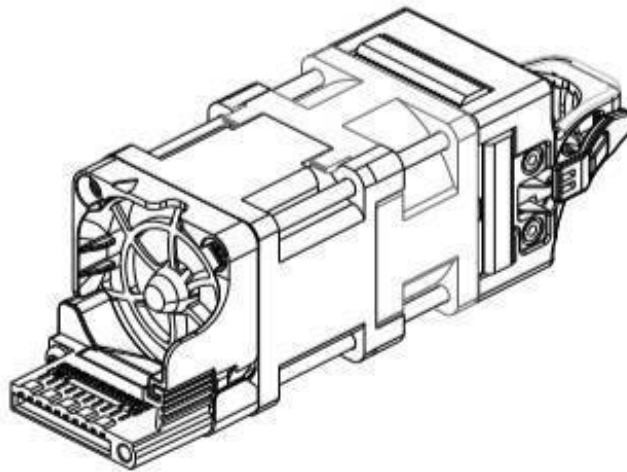


Figure 5: Extreme 8820-40C fan module

Extreme 8820-80C Fan Modules

Two fan module options, with front-to-back or back-to-front airflow, are available for the Extreme 8820-80C models.

- 8820-80C fan unit with front-to-back airflow - (part no. XN-FAN-004-F)
- 8820-80C fan unit with back-to-front airflow - (part no. XN-FAN-004-R)

For information on installing or replacing a fan module, see [Replace Fan Modules](#) on page 56.

LEDs on the fan module provide information on the unit's operational status. See [Monitor the Device](#) on page 50 for details.

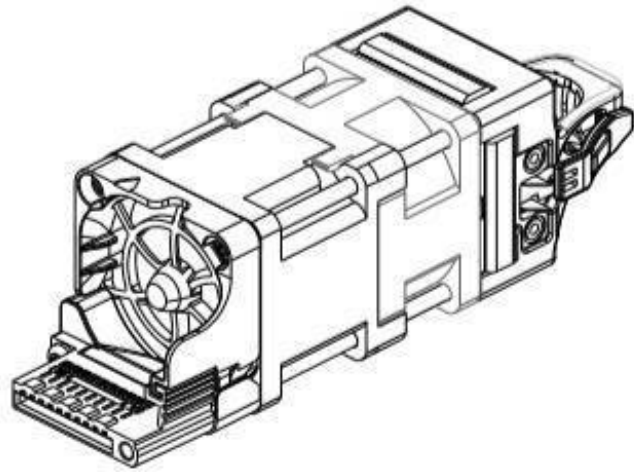


Figure 6: Extreme 8820-80C fan module



Site Preparation

[Plan Your Site on page 20](#)

[Operating Environment Requirements on page 21](#)

[Rack Specifications and Recommendations on page 24](#)

[Meet Power Requirements on page 25](#)

[Follow Applicable Industry Standards on page 27](#)

By carefully planning your site, you can maximize the performance of your existing network and ensure that it is ready to migrate to future networking technologies.

The information in this chapter is intended for the system administrator, network equipment technician, network manager, or facilities manager responsible for installing and managing the network hardware. The chapter assumes a working knowledge of local area network (LAN) operations, and a familiarity with communications protocols that are used on interconnected LANs.

Only qualified service personnel should install, maintain, or remove a switch, chassis, or its components. Qualified service personnel have had appropriate technical training and experience that is necessary to be aware of the hazards to which they are exposed when performing a task and of measures to minimize the danger to themselves or other people.



Note

Before installing or removing any components of the system, and before carrying out any maintenance procedures, read the safety information in "Technical Specifications".

Plan Your Site

To install your equipment successfully, you should plan the site carefully. The site planning process has three major parts:

1. Meeting site requirements.

The physical installation site must meet the following requirements for a safe and successful installation:

- Building and electrical code requirements
 - Environmental, safety, and thermal requirements for the equipment you plan to install
 - Equipment rack requirements
2. Evaluating and meeting cable requirements.

After examining your physical site and verifying that all environment requirements are met, evaluate and compare your existing cable plant with the requirements of the Extreme Networks equipment to determine if you need to install new cables.

3. Meeting power requirements.

To run your equipment safely, you must meet the specific power requirements for each switch and external power supply unit installed in the system.

For power specifications of the switches, see the specific switch listings in "Technical Specifications."

Operating Environment Requirements

Verify that your site meets all environmental and safety requirements.

Virtually all areas of the United States are regulated by building codes and standards. During the early planning stages of installing or modifying your network, it is important that you develop a thorough understanding of the regulations that pertain to your location and industry.

Meet Building and Electrical Codes

Building and electrical codes vary depending on your location. Comply with all code specifications when planning your site and installing cable. This section lists resources for obtaining additional information.

For information about major building codes, consult the following organization:

International Code Council (ICC)
5203 Leesburg Pike
Falls Church, VA 22041 USA
www.iccsafe.org

The organizations who are the authorities on electrical codes are listed in the table *Authorities on Electrical codes* below.

Table 6: Authorities on Electrical Codes

Organization	Address	Web Site URL
National Electrical Code (NEC) Classification (USA only) Recognized authority on safe electrical wiring. Federal, state, and local governments use NEC standards to establish their own laws, ordinances, and codes on wiring specifications. The NEC classification is published by the National Fire Protection Association (NFPA).	NFPA 1 Batterymarch Park Quincy, MA 02169 USA	www.nfpa.org
Underwriters' Laboratory (UL) Independent research and testing laboratory. UL evaluates the performance and capability of electrical wiring and equipment to determine whether they meet certain safety standards when properly used. Acceptance is usually indicated by the words "UL Approved" or "UL Listed."	UL 333 Pflingsten Road Northbrook, IL 60062 USA	www.ul.com

Table 6: Authorities on Electrical Codes (continued)

Organization	Address	Web Site URL
National Electrical Manufacturing Association (NEMA) (USA only) Organization of electrical product manufacturers. Members develop consensus standards for cables, wiring, and electrical components.	NEMA 1300 N. 17th Street Rosslyn, VA 22209 USA	www.nema.org
Electronic Components Industry Association (ECIA) Trade association that develops technical standards, disseminates marketing data, and maintains contact with government agencies in matters relating to the electronics industry.	ECIA 111 Alderman Drive Suite 400 Alpharetta, GA 30005 USA	www.ecianow.org
Federal Communications Commission (FCC) (USA only) Commission that regulates all interstate and foreign electrical communication systems that originate in the United States according to the Communications Act of 1934. The FCC regulates all U.S. telephone and cable systems.	FCC 445 12th Street S.W. Washington, DC 20554 USA	www.fcc.gov

Set up the Wiring Closet

Be aware of the following recommendations for your wiring closet:

- Make sure that your system is easily accessible for installation and service. See [Rack Specifications and Recommendations](#) on page 24 for more information.
- Use appropriate AC or DC power, power distribution, and grounding for your specific installation.
- Use a vinyl floor covering in your wiring closet. (Concrete floors accumulate dust, and carpets can cause static electricity.)
- Prevent unauthorized access to wiring closets by providing door locks. Install the equipment in a secured, enclosed, and restricted access location, ensuring that only qualified service personnel have access to the equipment.
- Provide adequate overhead lighting for easy maintenance.
- Be sure that each wiring closet has a suitable ground. All equipment racks and equipment installed in the closet should be grounded.
- Be sure that all system environmental requirements are met, such as ambient temperature and humidity.



Note

We recommend that you consult an electrical contractor for commercial building and wiring specifications.

Control the Temperature

Extreme Networks equipment generates a significant amount of heat. It is essential that you provide a temperature-controlled environment for both performance and safety.

Install the equipment only in a temperature- and humidity-controlled indoor area that is free of airborne materials that can conduct electricity. Too much humidity can cause a fire. Too little humidity can produce electrical shock and fire.

Observe these additional thermal recommendations for the location where you plan to install your equipment:

- Ensure that the ventilation in the wiring closet is adequate to maintain a temperature no higher than 40°C (104°F). (Some configurations support lower operating temperatures. See [Environmental Standards](#) for details.)
- Install a reliable air conditioning and ventilation system.
- Keep the ventilation in the wiring closet running during non-business hours; otherwise, the equipment can overheat.
- Maintain a storage temperature between -25°C (-13°F) and 55°C (131°F).

When internal system temperatures exceed the thermal shutdown temperature limit (typically about 20°C higher than normal system operating temperatures), the system's power supplies are turned off and the switch shuts down. The system remains in the OFF state until the system has sufficient time to cool and the internal thermal sensor measures a temperature lower than the maximum specified ambient temperature, at which time the system restarts automatically.

Alternately, you can restart the system immediately by removing and then restoring all line power to the system.

Safeguards are built into all Extreme Networks switches and power supply units to minimize the risk of fire.

Control the Humidity Level

To maximize equipment life, keep operating humidity between 50% and 70% relative humidity (non-condensing) during typical operation.

The equipment can operate between 5% and 95% relative humidity (non-condensing) for short intervals.

Protect Your System from ESD (Electrostatic Discharge)

Before You Begin

Your system must be protected from static electricity or ESD. Take the following measures to ensure optimum system performance:

Procedure

- Remove materials that can cause electrostatic generation (such as synthetic resins) from the wiring closet.
Check the appropriateness of floor mats and flooring.
- Connect metal chassis, conduit, and other metals to ground using dedicated grounding lines.
- Use electrostatically safe equipment.

If you are working with pluggable interface modules, wear an ESD-preventive wrist strap and connect the metal end to a grounded equipment rack or other source of ground.

Rack Specifications and Recommendations

Racks should conform to conventional standards.

In the United States, use EIA Standard RS-310C: Racks, Panels, and Associated Equipment. In countries other than the United States, use IEC Standard 297. In addition, verify that your rack meets the basic mechanical, space, and earthquake requirements that are described in this section.

Mechanical Recommendations for the Rack

Use equipment racks that meet the following mechanical recommendations:

- Use an open style, 19-inch rack to facilitate easy maintenance and to provide proper ventilation.
- Use a rack made of steel or aluminum.
- The rack should use the universal mounting rail hole pattern that is identified in IEC Standard 297.
- The rack should have designated earth grounding connections (typically on the base).
- The rack must meet earthquake safety requirements equal to that of the installed chassis.
- The mounting holes should be flush with the rails to accommodate the chassis.
- The rack should support approximately 270 kg (600 lb).

Ground the Rack

The rack must be properly grounded.

Use a rack grounding kit and a ground conductor that is carried back to earth or to another suitable building ground.

At a minimum, follow these guidelines to ground equipment racks to the earth ground:

- CAD weld appropriate wire terminals to building I-beams or earth ground rods.
- For a DC-powered switch, use a minimum 14 AWG stranded copper wire for grounding.

AC-powered switches do not need separate chassis grounding.

- Position the earth ground as close to the equipment rack as possible to maintain the shortest wiring distance possible.
- Use a ground impedance tester or micro-ohm meter to test the quality of earth ground connection at the chassis. This will ensure good grounding between the chassis, rack, and earth ground.



Note

Because building codes vary worldwide, Extreme Networks strongly recommends that you consult an electrical contractor to ensure proper equipment grounding for your specific installation.

Provide Adequate Space for the Rack

Provide enough space in front of and behind the switch so that you can service it easily.

Allow a minimum of 48 inches (122 cm) in front of the rack and 30 inches (76 cm) behind the rack. When using a relay (two-post) rack, provide a minimum of 24 inches (61 cm) of space behind the mounted equipment. Extra room on each side is optional.



Warning

Extreme Networks switches do not have a switch for turning power to the unit on and off. For systems using an AC power supply, power to the switch is disconnected by removing the wall plug from the electrical outlet.

Be sure that cables and other equipment do not block the switch's air intake or outflow.

Depending on other conditions in the equipment room, it may be possible to install the switches closer to each other; consult your Extreme Networks Customer Support representative for guidance.

Secure the Rack

The rack should be attached to the wiring closet floor with 9.5 mm (3/8 in) lag screws or equivalent hardware. The floor under the rack should be level within 5 mm (3/16 in). Use a floor-leveling cement compound if necessary or bolt the racks to the floor as shown.

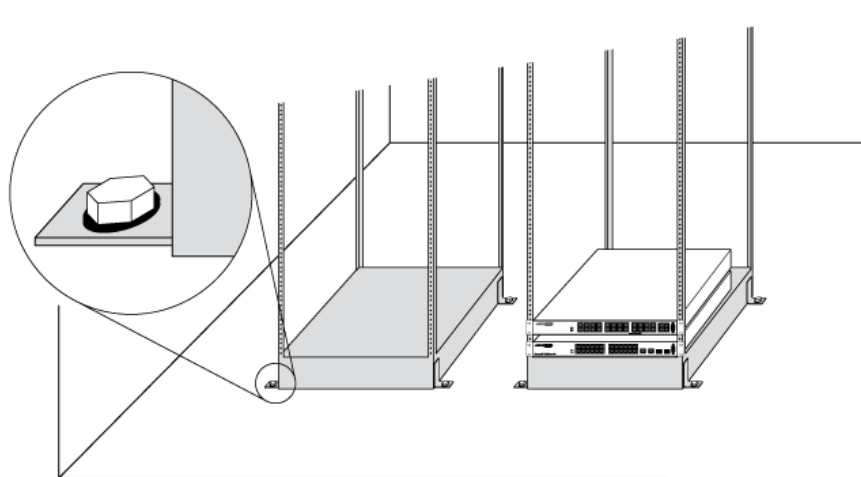


Figure 7: Properly Secured Rack

Brace open equipment racks if the channel thickness is less than 6.4 mm (1/4 in).

Meet Power Requirements

Observe the following requirements and precautions for powering your hardware.

Power Supply Requirements

Follow these recommendations when you plan power supply connections for your equipment:

- Place the equipment in an area that accommodates the power consumption and component heat dissipation specifications.
- Be sure that your power supply meets the site DC power or AC power requirements of the network equipment.

- When you connect power to installed equipment, do not make this connection through an extension cord or power strip.
- If your switch includes more than one power supply, connect each power supply to a different, independent power source.

If a power source fails, it will affect only the switch power supply to which it is connected. If all switch power supplies are connected to a single power source, the entire switch is vulnerable to a power source failure.

- In regions that are susceptible to electrical storms, we recommend that you plug your system into a surge suppressor.

For detailed power specifications for your equipment, see the "ExtremeSwitching SLX 9150 Technical Specifications" section.

Requirements for Power Cords

Most ExtremeSwitching devices do not ship with power cords. Visit www.extremenetworks.com/product/powercords/ for information on selecting and purchasing the correct power cords for use with specific Extreme Networks equipment. The web page provides specifications for power cords in each country so that you can purchase cords locally.

UPS (Uninterruptible Power Supply) Requirements

A UPS (uninterruptible power supply) is a device that sits between a power supply (such as a wall outlet) and a device (such as a switch) to prevent outages, sags, surges, and bad harmonics from adversely affecting the performance of the device.

A UPS traditionally can perform the following functions:

- Absorb relatively small power surges.
- Smooth out noisy power sources.
- Continue to provide power to equipment during line sags.
- Provide power for a period of time after a blackout has occurred.

In addition, some UPS devices or UPS-plus-software combinations provide the following functions:

- Automatically shut down equipment during long power outages.
- Monitor and log power supply status.
- Display the voltage (current draw) of the equipment.
- Restart equipment after a long power outage.
- Display the voltage currently on the line.
- Provide alarms on certain error conditions.
- Provide short-circuit protection.

Select a UPS

To determine UPS requirements for your switch, answer these questions:

- What are the amperage requirements?
- What is the longest potential time period that the UPS would be required to supply backup power?

- Where will the UPS be installed?
- What is the maximum transition time that the installation will allow? (See [Provide a Suitable UPS Transition Time](#) on page 27 .)

**Note**

We recommend that you use a UPS that provides online protection.

Calculate Volt-Amperage Requirements

About This Task

To determine the size of UPS that you need:

Procedure

1. Locate the voltage and amperage requirements for each piece of equipment.
These numbers are usually found on a sticker on the back or bottom of your equipment.
2. Multiply the numbers together to get Volt-Amperes (VA):
 $VA = \text{Volts} \times \text{Amperes}$
3. Add the VA from all the pieces of equipment together to find the total VA requirement.
To determine the minimum volt-amperage requirements for your UPS, we recommend that you add 30% to the total.

Provide a Suitable UPS Transition Time

UPS transition time is the time required for the UPS to change from providing AC power derived from the utility (or mains) supply to providing AC power derived from the battery backup. UPS transition time is sometimes called *UPS transfer time*.

UPS transition times vary between UPS models and implementations, but shorter transition times are preferred. For Extreme Networks stacking products, we recommend a UPS transition time of 20 milliseconds or less to ensure optimum performance and minimize service interruptions.

For high-availability and fault-tolerant installations in which the switches use redundant power supply units (PSUs), we recommend that each PSU in a switch be connected to a different UPS and that each UPS be powered by an independent AC supply. This will prevent service interruptions when a power source is lost, or when a UPS unit fails. (Note that a single, appropriately sized UPS can power PSUs in multiple switches. The recommendation is simply that for any given switch, the two PSUs should be connected to different UPS units.)

Follow Applicable Industry Standards

Always follow applicable industry standards.

For more information, see the following ANSI/TIA/EIA standards:

- ANSI/TIA/EIA-568-A—the six subsystems of a structured cabling system
- ANSI/TIA/EIA-569-A—design considerations
- ANSI/TIA/EIA-606—cabling system administration
- ANSI/TIA/EIA-607—commercial building grounding and bonding requirements

You can access these standards at: www.ansi.org or www.tiaonline.org.



Install Your Switch

[Safety Considerations for Installation](#) on page 29

[What You Will Need for the Installation](#) on page 30

[Attach Your Device to a Rack or Cabinet](#) on page 30

[Install Optional Components](#) on page 40

[Install Internal Power Supplies](#) on page 40

[Turn on the Device](#) on page 46

[Connect Network Interface Cables](#) on page 47

Before you attempt to install or remove an Extreme Networks switch or router, read the precautions in [Safety Considerations for Installation](#) on page 29.

Extreme Networks switches and routers fit into standard 19-inch equipment racks.

A four-post rack-mounting kit is provided with the device. A two-post kit can be ordered separately.

The installation process includes the following tasks:

1. Prepare to install the device. See [What You Will Need for the Installation](#) on page 30.
2. Install the device in the rack. See [Attach Your Device to a Rack or Cabinet](#) on page 30.
3. Install optional components: optical transceivers and cables. See the instructions in [Install Optional Components](#) on page 40.
4. If your device does not come with an installed internal power supply, install one or two power supplies. See [Install Internal Power Supplies](#) on page 40.



Note

Be aware of whether the power supply you are installing is AC-powered or a DC-powered. The installation instructions are different depending upon what type of power is used.

5. Power up the device. See [Turn on the Device](#) on page 46.
6. Connect network interface cables. See [Connect Network Interface Cables](#) on page 47.
7. Perform initial network connection and configuration. See [Activate and Verify Your Switch](#) on page 48.

Safety Considerations for Installation

Read the information in this chapter thoroughly before you attempt to install or remove an Extreme Networks switch.

Ensure that proper ESD (electrostatic discharge) controls are in use before switch maintenance is performed. This includes but is not limited to wrist straps that are grounded to the switch housing and earth grounds.

**Warning**

Connect the chassis ground wire **before** you connect any DC power cables.
Disconnect the ground wire **after** you disconnect all DC power cables.

Take care to load the equipment rack so that it is not top-heavy. Start installing equipment at the bottom of the rack and work up.

Do not cover vents that would restrict airflow.

**Note**

See [Safety and Regulatory Information](#) on page 77 for additional safety information and additional information regarding regulatory compliance certifications.

What You Will Need for the Installation

Ensure that you have followed the guidance in [Site Preparation](#) on page 20, and ensure that you have the appropriate people and tools on hand.

Installing Extreme Networks switches is easiest when there are two people to maneuver the switch and attach mounting hardware.

Provide enough space in front of and behind the switch so that you can service it easily. Ensure that a minimum of 122 cm (48 in) in front of the rack and 76 cm (30 in) behind the rack.

If your switch has internal power supplies, make sure they have the same airflow direction as the fans in the switch.

Check the *Quick Reference Guide* for your switch model to see what hardware is provided in the switch packaging.

You need the following additional tools and equipment. These are not provided with your switch:

- Screwdriver for securing the rack mounting screws.
- #2 Phillips magnetic screwdriver to attach bracket screws that are provided with the switch.
- ESD-preventive wrist strap for installing optional ports at the back of the switch.

Attach Your Device to a Rack or Cabinet

To attach the Extreme 8820 to a two-post rack, a four-post rack, or a cabinet, follow these steps.

**Note**

- When you install Extreme Networks switches, it is a best practice that you have two people to maneuver the switch and the mounting hardware.
- Take care to load the rack so that it is not top-heavy. Start installing equipment at the bottom and work up.

After the device is attached to the rack, refer to [Remove the Switch from the Rack](#) on page 61 if you need to remove it.

Attach the Device to a Four-Post Rack

A four-post rack-mounting kit (XN-4P-RKMT301 for Extreme 8820-80C or XN-4P-RKMT302 for Extreme 8820-40C) is included in the box with your device. The kit contains an instruction sheet, along with the following components:

- Two mounting brackets, known as *inner member* in the instruction sheet. These pieces attach directly to both sides of the device housing.
- Two slider assemblies, one for each side of the device. Each slider assembly consists of an outer piece that is secured to the rack and a sliding rail to which you will attach the corresponding mounting bracket. These pieces are known on the instruction sheet as the *outer member* and *intermediate member*.
- Mounting ears - Black rack ears with a thumb screw in the middle (2 count)
- Black mounting ear screws (6 count)

To attach your device to a four-post rack, follow these steps:

1. Separate the inner sliding rails from the outer rails by extending the rails and pulling the disconnect latch. Note which direction the sliding rails slide from the outer rails for correct installation.

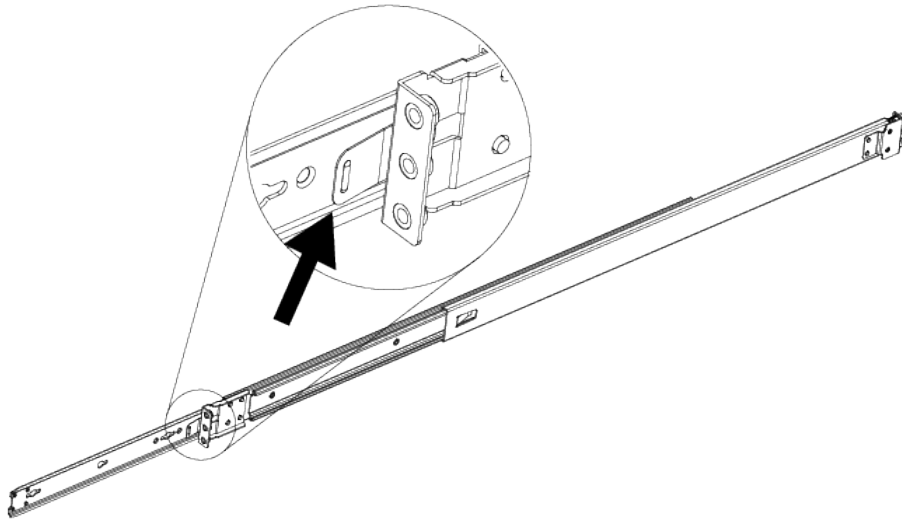


Figure 8: Separating the Inner Sliding Rails

2. Attach the outer rail (bracket) to the rack, securing it with the M5 screws.

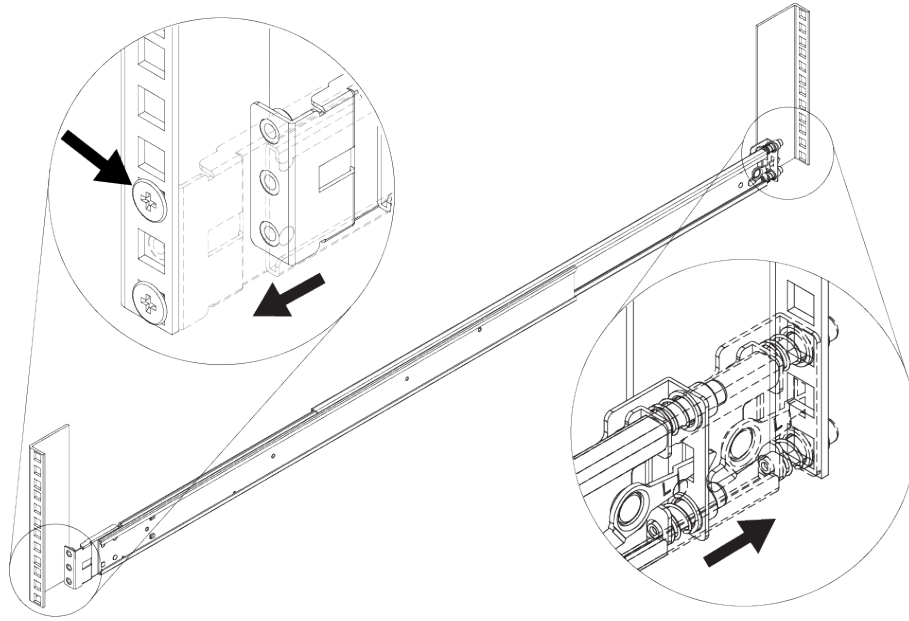


Figure 9: Attaching the Outer Rail

3. Attach an inner rail to the side of the unit, using the M4 screws.
 - If you are using the 1U long rack ears (already attached to the inner rail): Ensure that the rack ear is flush with the either the front or the rear panel of the unit and continue to step 4 on page 33.

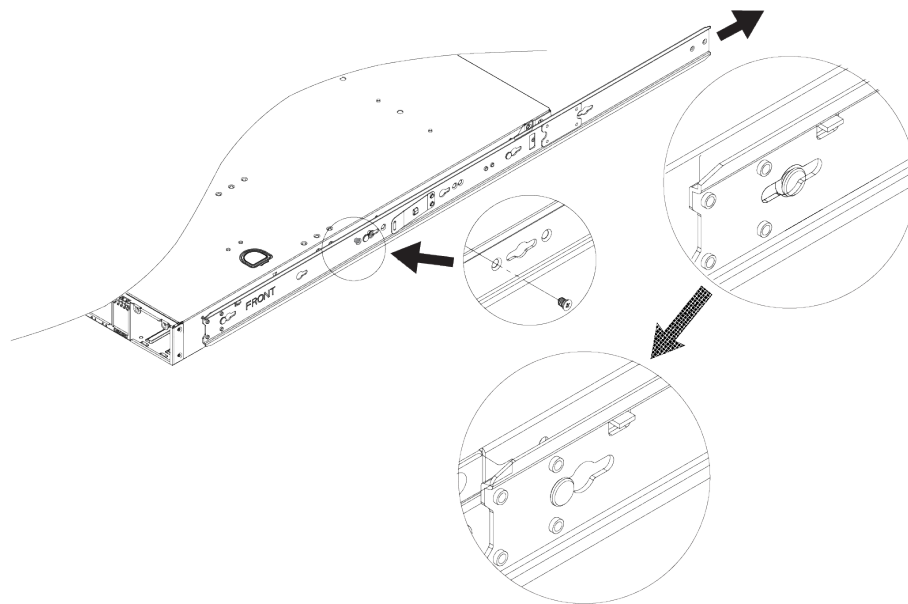


Figure 10: Front Installation: Attaching the Inner Rail

- If using the 1U or 2U short rack ears, attach one to the side of the unit using the #6-32 screws, so that the rack ear is flush with either the front or the rear panel of the unit.

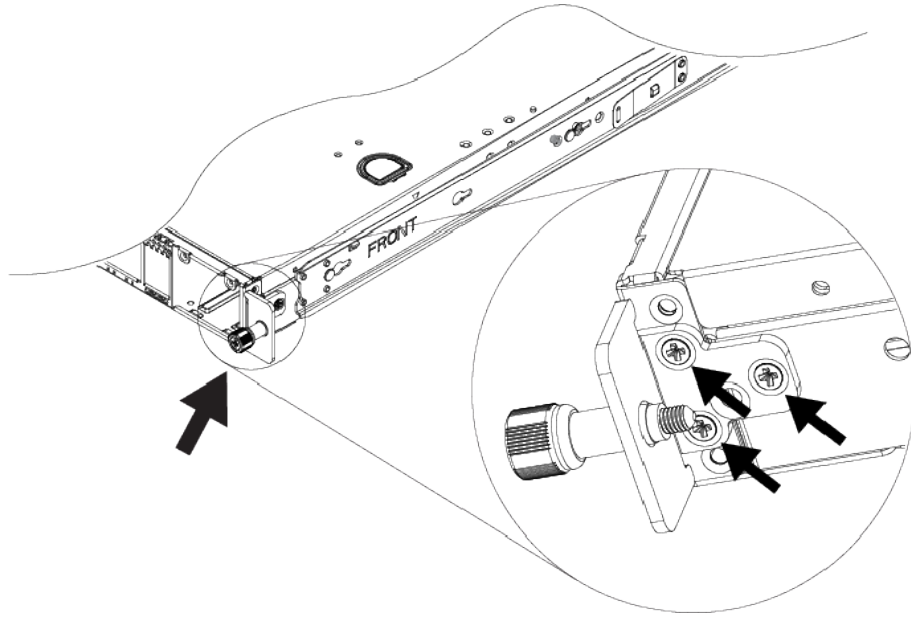


Figure 11: Front Installation: Attaching a Rack Ear

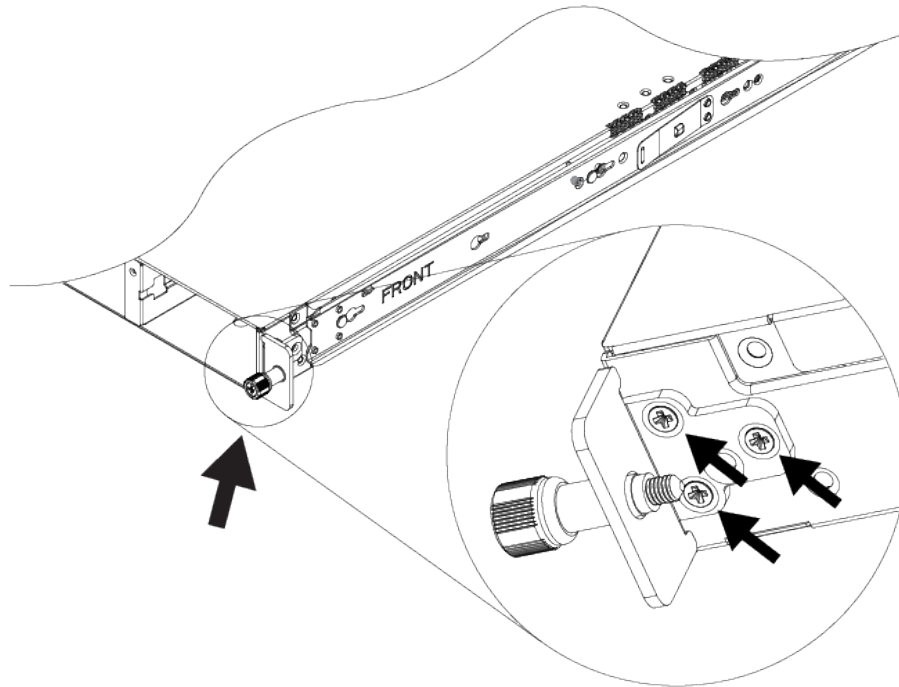


Figure 12: Rear Installation: Attaching a Rack Ear

4. Repeat steps 2 on page 31 and 3 for the other side of the device.
5. Insert the device into the rail kit. To install the device in the front of the rack, slide the device into the outer rails in the front of the rack.

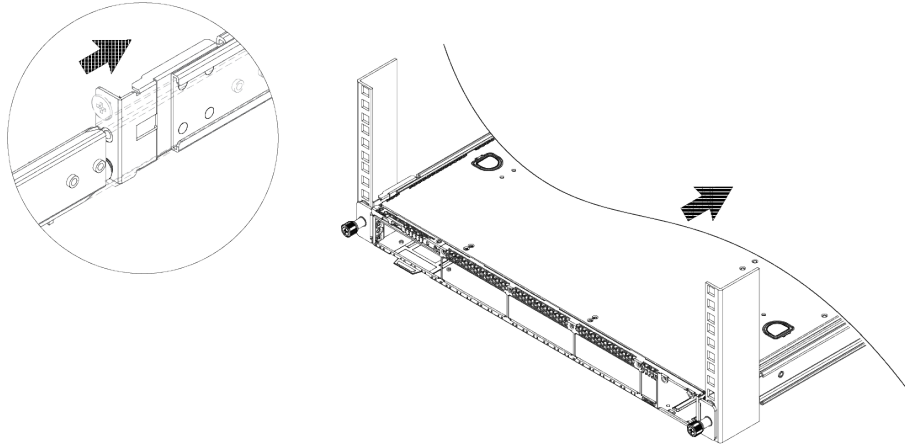


Figure 13: Front Installation: Inserting the Device

To install the device in the rear of the rack, slide the device into the outer rails in the rear of the rack.

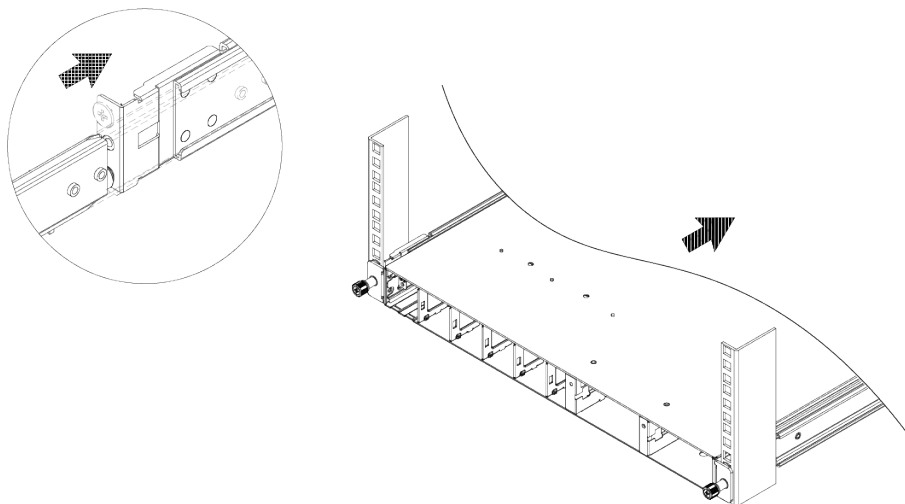


Figure 14: Rear Installation: Inserting the Device

Secure the device to the rack using the thumb screws on the mounting ears.

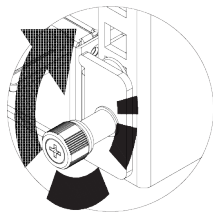


Figure 15: Secure the Device

Attach the Device to a Two-Post Rack

You can attach your device to a two-post rack in mid-mount configuration.

Brackets for a two-post mount are not included in the box with your device. However, a two-post mount kit can be ordered separately using part numbers XN-2P-RKMT299 for the Extreme 8820-40C or XN-2P-RKMT300 for the Extreme 8820-80C.

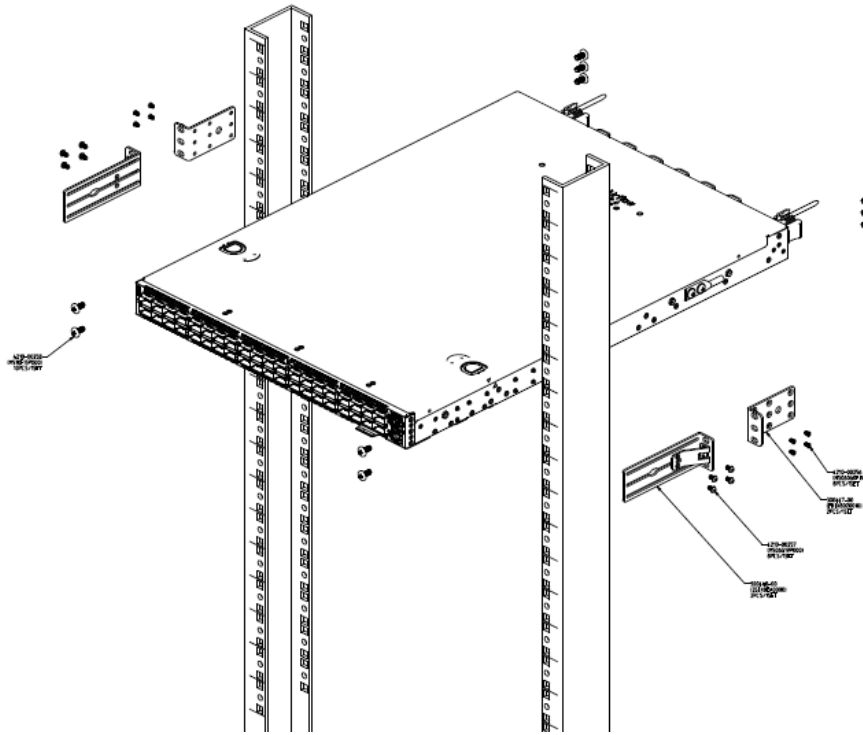


Figure 16: Extreme 8820-40C 2-post rack components

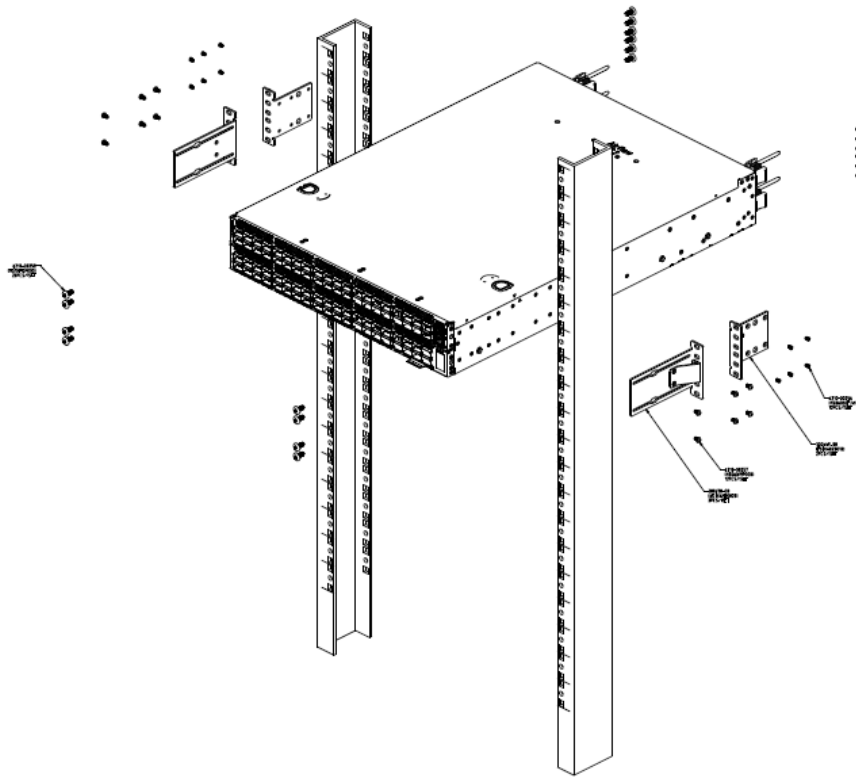


Figure 17: Extreme 8820-80C 2-post rack components

To attach your device to a two-post rack, follow these steps:

1. On one side of the device, attach one of the short mounting brackets to the device housing.
 - a. Position the bracket so that the flange (ear) is positioned slightly more than halfway between the front and back of the device, as shown in [Figure 18](#).

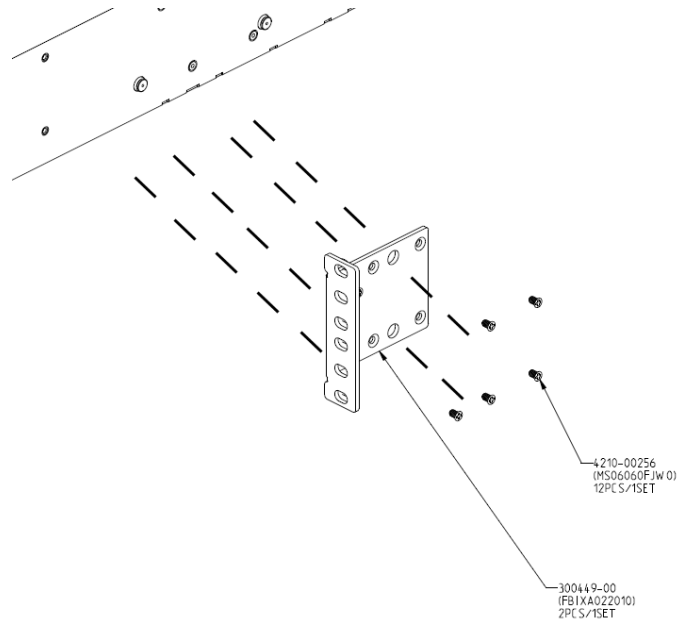


Figure 18: Attaching a Short Mounting Bracket (Ear): Middle of Device

- b. Use six small mounting screws (provided) to attach the bracket to the device.
2. Attach the other short mounting bracket to the other side of the device router housing, as you did in step 1.
3. Attach a long mounting bracket to one side of the device router housing and to the rack post.
 - a. Position the long bracket over the holes between the front and the middle of the device. Orient it so that its flange (ear) rests against the rack post.

See [Figure 19](#).

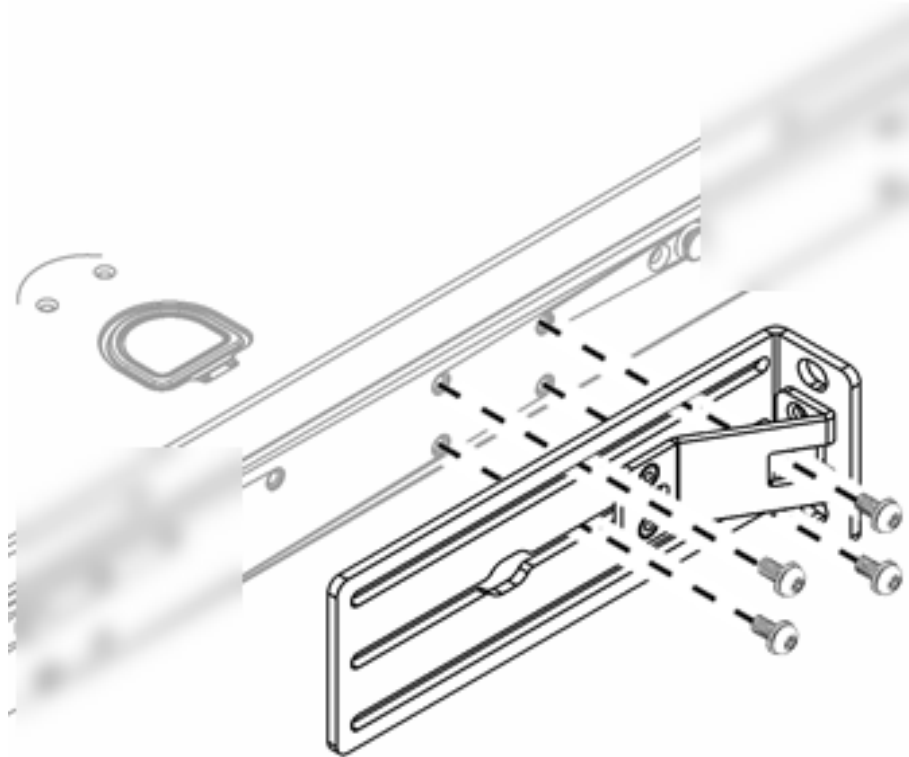


Figure 19: Attaching a Long Mounting Bracket: Middle of Device Router

- b. Use six small mounting screws (provided) to attach the bracket to the device.
- c. Secure the long bracket to the rack post. (Rack-mounting screws are not provided.)
4. Repeat step 3 to attach the other long bracket on the other side of the device.
5. Tilting the device slightly, lift it into the rack so that the mounting brackets align with the rack posts.

If the device cannot be tilted (because other equipment is mounted directly above and below), remove one or both short mounting brackets from the device. Lift the device into position, secure the flanges (ears) on the long brackets to the rack posts, and then reattach the short brackets.

6. Secure the flanges (ears) on both sides of the device to the rack posts, using screws that are appropriate for the rack. (Rack-mounting screws are not provided.)

See [Figure 20](#) for the completed installation.

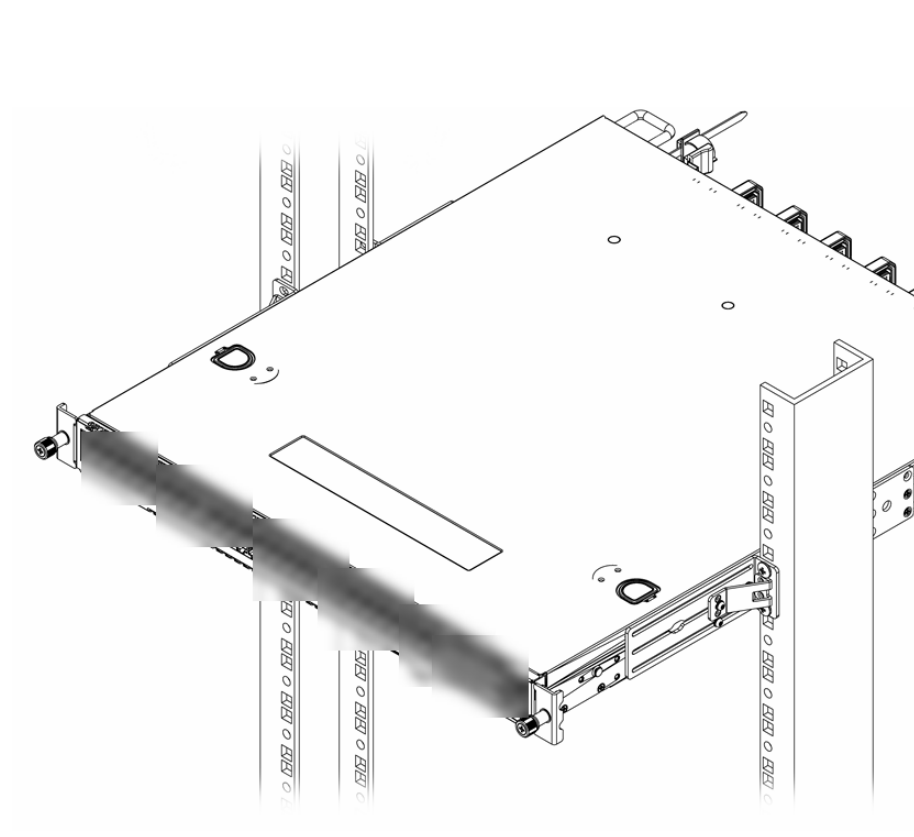


Figure 20: Two-Post Mid-Mount: Complete

7. For Extreme 8820-40C, install the ground lug cables to the rack using an M6 screw and the four screws provided (grounding screws for 2-post installation shipped with the device in a separate bag).

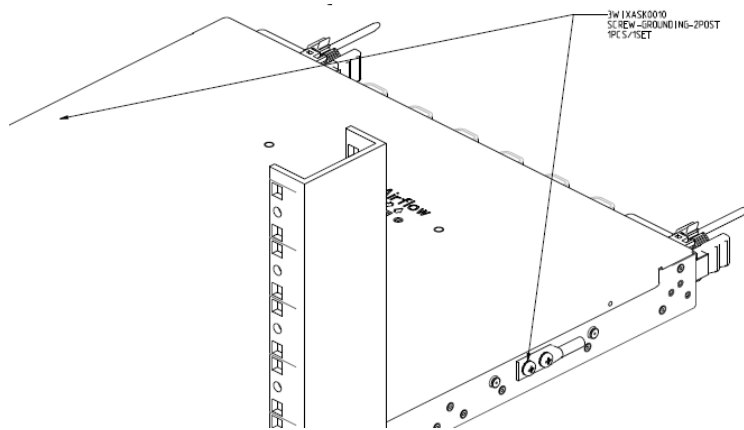


Figure 21: Extreme 8820-40C grounding location

8. Verify that the device is level and is firmly attached to the rack.

If your device comes with installed AC power supplies, skip to the topic: [Turn on the Device](#) on page 46.

If your device does not have an installed power supply, install one or two power supplies using the instructions in [Install Internal Power Supplies](#) on page 40.

Install Optional Components

After the switch is secured to the rack, install optional components.

ExtremeSwitching switches support the use of pluggable transceivers and cables in the SFP+, SFP28, QSFP+, and QSFP28 formats.

For a list of the optical components supported with ExtremeSwitching devices, see the [Extreme Optics](#) website.

Pluggable Transceiver Modules

Extreme Networks offers several optical transceiver modules for transmitting and receiving data over optical fiber rather than through electrical wires.

**Note**

A small flat-blade screwdriver can be used to free an obstructed bale clasp on an optical module.

Optical Cables

Direct-attach copper and fiber cables provide connections between populated SFP+, SFP28, QSFP+, and QSFP28 ports.

Install Internal Power Supplies

If your device does not come with an installed internal power supply, you can install one or two power supplies.

The following internal power supplies (PSUs) are available for 8820 Series switches:

- 1600W AC power supply - front-to-back airflow (part no. XN-ACPWR-1600W-F)
- 1600W AC power supply - back-to-front airflow (part no. XN-ACPWR-1600W-R)
- 1600W DC power supply - front-to-back airflow (part no. XN-DCPWR-1600W-F)
- 1600W DC power supply - back-to-front airflow (part no. XN-DCPWR-1600W-R)

Follow the instructions in the following topics to install the appropriate power supply and connect power to the switch.

- [Install a 1600 W Internal AC Power Supply](#) on page 40
- [Install a 1600 W Internal DC Power Supply](#) on page 43

Install a 1600 W Internal AC Power Supply

To install a 1600 W AC power supply (either part no. XN-ACPWR-1600W-F or part no. XN-ACPWR-1600W-R) in a switch, follow these instructions.

All installed power supplies must have the same airflow direction (front-to-back or back-to-front) and must match the airflow direction of the installed fan modules.

**Warning**

To prevent an electrical hazard, make sure that the AC power cord is not connected to the power supply before you install the power supply in the power supply bay.

**Warning**

Make sure that the AC power supply circuit is not overloaded. Use proper over-current protection, such as a circuit-breaker, to prevent over-current conditions.

1. Remove a blank panel from the back of the switch if necessary.
2. Verify that the new power supply is right side up.
3. Verify that the new power supply's airflow direction (front-to-back or back-to-front) is compatible with the other installed power supply (if any) and with the installed fan modules.
4. Carefully slide the power supply all the way into the power supply bay:

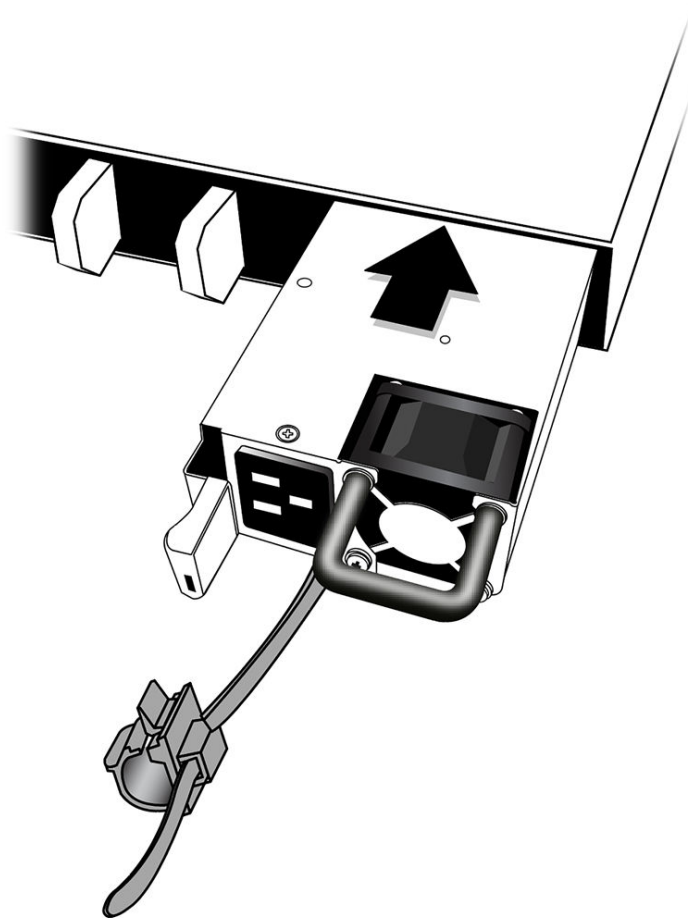


Figure 22: Installing a 1600 W AC Power Supply

5. Push the power supply in until the latch snaps into place.

Do not slam the power supply into the switch.

**Note**

If power supplies are not installed in all the power supply bays, be sure to install a cover over the unoccupied bays. Unoccupied bays must always be covered to maintain proper system ventilation and EMI levels.

6. Connect the AC power cord.
 - a. Slide the plastic cord retainer farther away from the back of the switch if necessary.
 - b. Connect the AC power cord to the input connector.
 - c. Open the clip and slip it over the barrel of the connector.

See [Figure 23](#).

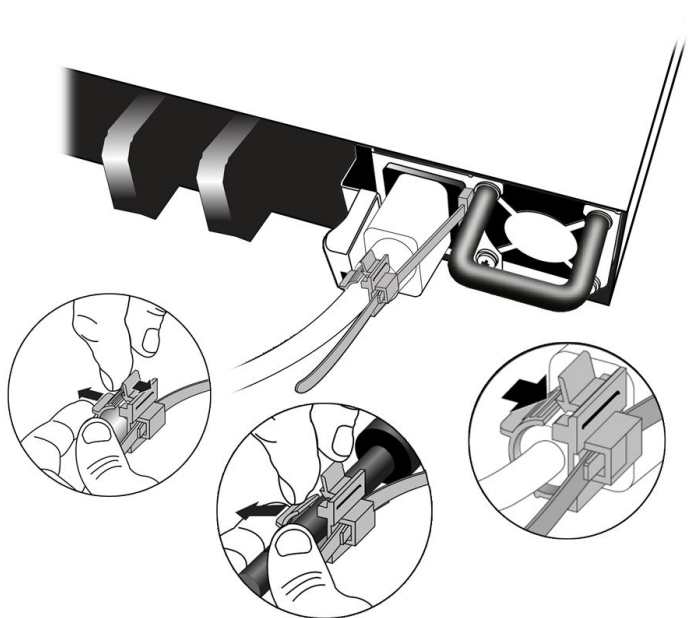


Figure 23: Power Supply with Power Cord and Retainer Attached

- d. Snap the clip firmly around the connector.
7. Connect the other end of the power cord to an AC power outlet.

**Warning**

Always make sure that the source outlet is properly grounded before plugging the AC power cord into the AC power supply.

To install a second power supply, repeat this procedure.

When you are finished, follow the steps in [Turn on the Device](#) on page 46.

Install a 1600 W Internal DC Power Supply



Caution

Make sure that the DC power supply circuit is not overloaded. Use proper overcurrent protection, such as a circuit breaker, to prevent overcurrent conditions. You can use up to a 30-Amp breaker.

To install a 1600 W DC power supply in a switch, perform the following tasks in the order listed:

1. Make sure you have the tools and materials you need. See [Required Tools and Materials to Install a 1600 W DC Power Supply](#) on page 43.
2. Prepare the ground cable by stripping off the insulation. See [Prepare the Cables for a 1600 W DC Power Supply](#) on page 43.
3. Insert the power supply into the switch. See [Install a 1600 W DC Power Supply](#) on page 44.
4. Connect the ground wire. See [Connect the Ground Wire to a 1600 W DC Power Supply](#) on page 44.
5. Connect the power supply to the DC source voltage. See [Connect a 1600 W DC Power Supply to the Source Voltage](#) on page 45.
6. Energize the DC circuit.

To install a second power supply, repeat this procedure.

When you are finished, follow the steps in [Turn on the Device](#) on page 46.

Required Tools and Materials to Install a 1600 W DC Power Supply

You need the following tools and materials to install or remove a 1600 W DC power supply in an Extreme 8820 switch.

- A #6 AWG copper cable for grounding the power supply and a DC power input cable, which is provided, to connect the power supply to the DC power source. The ground connection is green or green with a yellow stripe.
- Connection hardware appropriate to the installation site:
 - Hardware for connecting the power wires to the DC source
 - Hardware for connecting the ground wire to the site grounding point
- Stripping tool
- #1 cross-head (Phillips) screwdriver
- ESD-preventive wrist strap
- Thermal protective gloves (for removal of a warm power supply)

Prepare the Cables for a 1600 W DC Power Supply

You will need two cable wires for each installed DC power supply: one DC power input cable, which is provided, and a grounding cable. We recommend that each cable have differently colored insulation, as described in [Required Tools and Materials to Install a 1600 W DC Power Supply](#).

To prepare the cable wires, follow these steps:

1. Strip 6 mm (0.25 inch) of insulation from one end of the cable wire, on each cable wire, if necessary.
2. Repeat step 1 for the other cable wire.

Install a 1600 W DC Power Supply

Before installing a 1600 W DC power supply (either part no. XN-DCPWR-1600W-F or part no. XN-DCPWR-1600W-R):

- Verify that the airflow direction for the power supply is the same as the airflow direction of the installed fan modules in the switch.

To install the power supply, follow these steps:

**Caution**

The handle on the power supply is not designed to be used to lift or carry the power supply or the switch to which it is attached.

1. Attach an ESD-preventive wrist strap to your bare wrist and connect the metal end to an appropriate ground point on the rack.
2. Remove a blank panel from the rear of the switch if necessary.
3. Verify that the power supply is right side up (label on the bottom).
4. Carefully slide the power supply all the way into the power supply bay.
5. Push the power supply in until the latch snaps into place.

**Caution**

Do not slam the power supply into the switch.

6. To install a second power supply, repeat the procedure.

When you are finished, connect the ground wire to each power supply. See [Connect the Ground Wire to a 1600 W DC Power Supply](#).

Connect the Ground Wire to a 1600 W DC Power Supply

Follow these steps to connect the ground wire to a 1600 W DC power supply.

**Warning**

Be sure to connect the chassis ground wire before you connect any power cables.

**Warning**

Be sure to disconnect the ground wire after you disconnect all power cables.

1. Verify that the DC circuit is de-energized.
2. Attach an ESD-preventive wrist strap to your bare wrist and connect metal end to an appropriate ground point on the rack.
3. Connect the ground wire to the grounding point on the power supply, which is labeled GND. See [Figure 24](#).

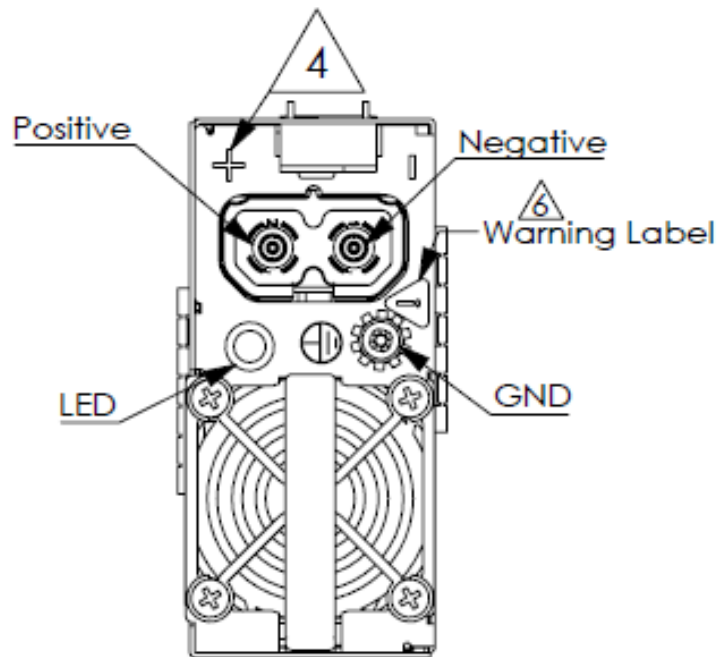



Figure 24: Front view of 1600 W DC PSU

Directly beneath the grounding point, you will see the international symbol for earth ground -  - on the body of the switch.

- a. Attach mm ring lug to the 6 AWG ground wire.
- b. Secure the ring lug with a 5mm hex socket and tighten.
- c. Gently tug the ground wire to make sure it is fastened securely.
4. Connect the other end of the wire to a known reliable earth ground point at your site.

When you have connected the ground wire, connect the power supply to the power source using the provided DC power input cable. Follow the instructions in [Connect a 1600 W DC Power Supply to the Source Voltage](#).

Connect a 1600 W DC Power Supply to the Source Voltage

The DC power connection at your facility must be made by a qualified electrician, following these instructions.



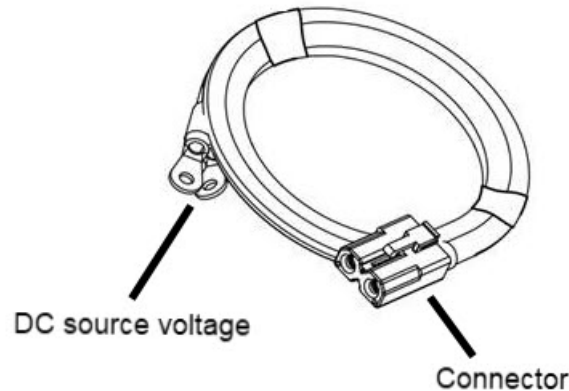
Warning

Always make sure that the DC circuit is de-energized before connecting or disconnecting the DC power cables on the DC power supply.

**Caution**

Provide proper connection and strain relief on the DC power cables in accordance with all local and national electrical codes.

1. Verify that the DC circuit is de-energized.
2. Attach an ESD-preventive wrist strap to your bare wrist and connect the metal end to an appropriate ground point on the rack.
3. Plug the connector that contains the **negative** (V+DC) and **positive** (V-DC) wires to the power supply.



4. Connect the cables to the DC source voltage, using hardware appropriate to the installation site and following local and national electrical codes.

Power up to the switch, following the steps in [Turn on the Device](#) on page 46.

Leave the ESD strap permanently connected to the rack, so that the strap is always available when you need to handle ESD-sensitive components.

Turn on the Device

Before You Begin

An AC power cord is not included with the AC power supply. You can purchase AC power cords for use in the US and Canada from Extreme networks or from your local supplier. The cord must meet the requirements listed in [Power Cord Requirements for AC-Powered Switches and AC Power Supplies](#) on page 73.

About This Task

To power up an Extreme Networks device, do the following.

Procedure

1. For devices that are connected to AC power, connect the power cord to the AC power input socket on the switch (or power supply) and to an AC power outlet.

2. For devices that are connected to DC power, do the following:
 - a. Verify that the DC circuit is de-energized.
 - b. Verify that the ground wire is connected to the grounding lug on the rear of the device.

The grounding lug is identified by the international symbol for earth ground:



- c. Verify that the DC power input cables are properly connected to the DC power supplies at the rear of the device.
 - d. Energize the circuit.
3. When power is connected, verify that the PSU LED turns green.

What to Do Next

When the PSU LED has turned green, follow the instructions in [Connect Network Interface Cables](#) on page 47.

If the PSU and RPS LEDs do not turn green, refer to the *LEDs* topic for your device model (in [Monitor the Device](#) on page 50) for troubleshooting information.

Connect Network Interface Cables

About This Task

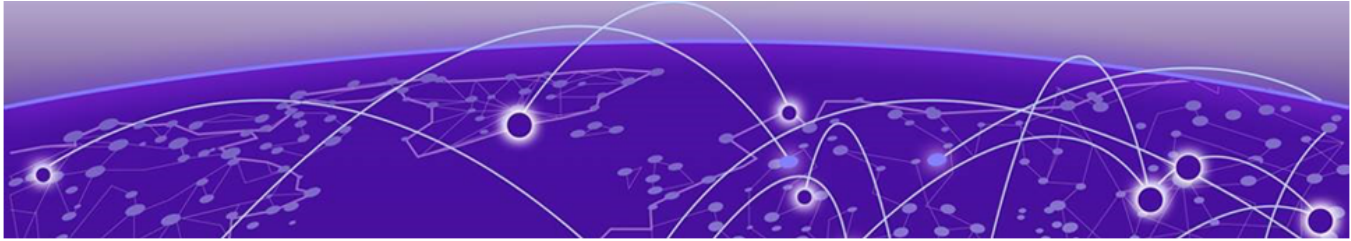
Use the appropriate type of cable to connect the ports of your switch to another switch or router.

Cable Type	Maximum Distance
CAT5E	55 meters
CAT6	55 meters
CAT6A	100 meters

Working carefully, one port at a time, do the following:

Procedure

1. Verify that you have identified the correct cable for the port.
2. Use an alcohol wipe or other appropriate cleaning agent to clean the cable connectors; make sure they are free of dust, oil, and other contaminants.
3. If you are using optical fiber cable, align the transmit (Tx) and receive (Rx) connectors with the correct corresponding connectors on the switch or the I/O module.
4. Press the cable connectors into their mating connectors on the switch or I/O module until the cable connector is firmly seated.
5. Repeat the preceding steps for the remaining cables on this or other switches or I/O modules.
6. Dress and secure the cable bundle to provide appropriate strain relief and protection against bends and kinks.



Activate and Verify Your Switch

[Establish a Serial Connection](#) on page 48
[Configure the Switch for Use](#) on page 49

After the Extreme 8820 is installed and powered on, use the instructions in the following topics to activate and verify the device.

Establish a Serial Connection

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

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



Note

The console or serial port is intended primarily for the initial setting of the IP address.

3. Access the device using a terminal emulator application (such as HyperTerminal in a Windows environment or Tip in a LINUX environment).
4. 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 LINUX 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 LINUX 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:
```

- Follow the steps to log into the switch and initial configuration steps in [Configure the Switch for Use](#) on page 49.

Configure the Switch for Use

To perform the initial login and complete the initial configuration tasks, follow these steps from the management console.

1. 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.
```

2. 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 Extreme 8820 device.

The switch is ready for use.

To configure other switch features, see *Extreme SLX-OS Layer 2 Switching Configuration Guide*.



Monitor the Device

- [System Status LEDs on page 50](#)
- [RJ-45 Management Port LEDs on page 51](#)
- [QSFP28 Port LEDs on page 52](#)
- [Fan LEDs on page 54](#)
- [Power Supply LEDs on page 54](#)

The following topics help you monitor the status of the switch as it is running.

System Status LEDs

System status LEDs are located on the front of the switch. The following table describes the colors and the states for the LEDs.

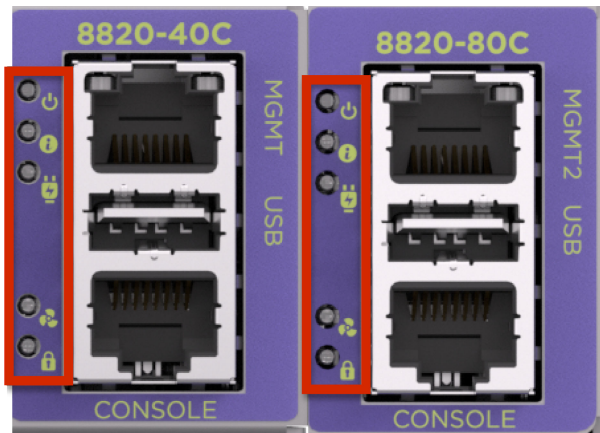


Figure 25: Extreme 8820 System Status LEDs

Table 7: System Status LEDs

LED	Color/State	Description
Power	Green	Valid power. All monitored voltages are nominal.
	Off	No power. Some power rails are dropping below specification.

Table 7: System Status LEDs (continued)

LED	Color/State	Description
System	Off	The unit is not operational.
	Green	Board is operational.
	Blinking amber-green	Attention (No definition). Controlled by SW.
	Amber	Fault/Initial state. This LED is lit during the reboot.
PSU Status	Off	No power.
	Green	Power on. Main and Standby output enabled with no PSU warning or fault detected.
	Amber	Fault. Power supply fault.
Fan Status	Off	No power.
	Green	All fans are operating normally.
	Amber	Fan failure.
Secure	Off	CeC1712 is booting up or fault. CeC1712 is performing the initial load (decrypt, validate, load) of its own code, prior to authenticating images. Or the CeC1712 was unable to decrypt, validate and load its own image.
	Blinking blue slowly (1 Hz)	CeC1712 is authenticating or updating images. CeC1712 is currently authenticating or copying golden image to primary.
	Blinking blue fast (4 Hz)	CeC1712 authentication failed. Neither primary nor golden image successfully validated.
	Blinking blue very slowly (0.25 Hz)	Bypass authentication. Bypassing authentication for test or development only.
	Blue	CeC1712 authentication complete. CeC1712 successfully authenticated the BIOS Flash-0 and BMC Flash-0 images.

RJ-45 Management Port LEDs

The 1 Gb RJ-45 Management port includes two LEDs that are both amber and green. The LEDs are located on each side of the RJ-45 port. The LED on the left side is labeled Speed and the LED on the right side is labeled Link/Activity. The Extreme 8820-40C models include one management port on the front panel, while the Extreme 8820-80C models include two management ports on the front panel. The following table describes the meaning of the colors and states for the LEDs.

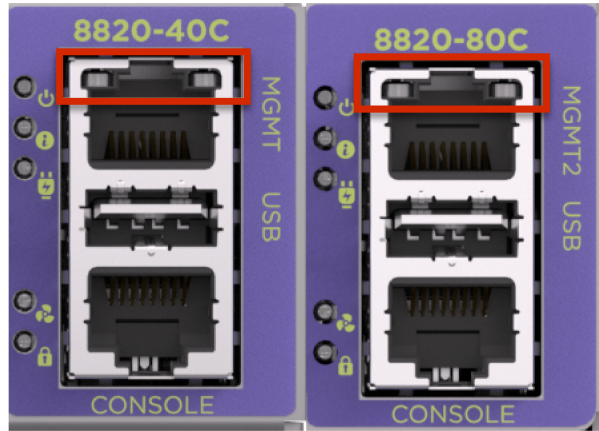


Figure 26: RJ45 Management Port LEDs

Table 8: 10/100/1000Base-T RJ-45 Management Port LEDs

LED	Color/State	Description
Speed	Off	The port is operating at 10 Mbps.
	Green	The port is operating at 1 Gbps.
	Amber	The port is operating at 100 Mbps.
Link/Activity	Off	No link.
	Green	The port has established a link. There is no data activity.
	Blinking green	The port has established a link and there is data activity.
	Blinking slowly green	The port is disabled by the admin.
	Amber	Fault.

QSFP28 Port LEDs

Each port has one LED to indicate channel status. A channel selector switch enables you to display the status of individual channels. The selected channel is indicated in the display. The following table describes the states for the LED.

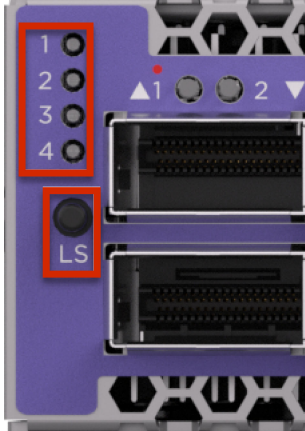


Figure 27: QSFP28 Port LEDs

4 Bit Selector Panel (Bit 3, 2, 1, 0)				QSFP28 Channel	Description	Port LED (if Error)	Port LED (if no error)
0	0	0	0	0 (Default) - Port and all channels	(Default) Indicate any error on port and all 4 lanes for any errors	Red or Yellow - if any error on port or any of the 4 lanes	Green - if no error on port and any of the 4 lanes
0	0	0	1	1	Indicate error on Lane 1	Red or Yellow - if any error on lane 1	Green - if no error on lane 1
0	0	1	0	2	Indicate error on Lane 2	Red or Yellow - if any error on lane 2	Green - if no error on lane 2
0	1	0		3	Indicate error on Lane 3	Red or Yellow - if any error on lane 3	Green - if no error on lane 3
1	0	0		4	Indicate error on Lane 4	Red or Yellow - if any error on lane 4	Green - if no error on lane 4

The following are the port/channel LED indications:

100G	Link/Activity	White	The port is linked
		Blinking white	The port has link established and there is data activity
		Off	No link
40G	Link/Activity	Blue	The port is linked
		Blinking blue	The port has link established and there is data activity
		Off	No link

25G	Link/Activity	Green	The port is linked
		Blinking green	The port has link established and there is data activity
		Off	No link
10G	Link/Activity	Yellow	The port is linked
		Blinking yellow	The port has link established and there is data activity
		Off	No link
Fault	Fault detected	Red	Local fault detected
		Blinking red	Remote fault detected.

Fan LEDs

Each fan module, located on the rear panel of the Extreme 8820, has a status LED that is green if that fan module is working properly, and is red if there is a fault condition. All other status LEDs are on the front panel of the Extreme 8820, including a fan module LED.

Power Supply LEDs

Each AC power supply module, located on the rear panel of the Extreme 8820, has a status LED that is green if that power supply module is working properly.

1600 W AC Power Supply LEDs

The following tables describe the meanings of the LEDs on the 1600 W AC power supply (part number XN-ACPWR-1600W-F or XN-ACPWR-1600W-R).

The LEDs are located on the end of the power supply unit, arranged vertically to the left of the power cord receptacle.

Table 9: 1600 W AC Power Supply LED Status Indications

Label and Color	Description	State	Meaning
! Amber	Fault Indicator	On (Solid)	PSU fault
		Off	No PSU fault
DC (Green)	DC output Good	On (solid)	DC output OK
		Off or Blinking	DC output fail
AC (Green)	AC input Good	On	AC input OK
		Off	AC input fail

1600 W DC Power Supply LEDs

The following tables describe the meanings of the LEDs on the 1600 W DC power supply (part number XN-DCPWR-1600W-F or XN-DCPWR-1600W-R).

The LEDs are located on the end of the power supply unit, arranged vertically to the left of the terminal block.

Table 10: 1600 W DC Power Supply LED Status Indications

Label and Color	Description	State	Meaning
! Amber	Fault Indicator	On (Solid)	PSU fault
		Off	No PSU fault
OUT OK (Green)	DC output Good	On (solid)	DC output OK
		Off or Blinking	DC output fail
IN OK (Green)	DC input Good "IN OK"	On	DC input OK
		Off	DC input fail



Remove and Replace Components

[Replacing Internal Power Supplies](#) on page 56

[Replace Fan Modules](#) on page 56

[Change Airflow Direction](#) on page 58

[Remove the Switch from the Rack](#) on page 61

Use the information in the following topics to remove or replace power supply units, or fan modules, or remove the device from the rack. You can also change the airflow direction of the device.

Replacing Internal Power Supplies

You can replace internal power supplies as needed while the switch is operating ("hot swapping").

All installed power supplies must have the same airflow direction (front-to-back or back-to-front) and must also match the airflow direction of the fan modules.

To replace one or more AC internal power supplies in an Extreme 8820 switch, follow the steps in [Install a 1600 W Internal AC Power Supply](#) on page 40.

To replace one or more DC internal power supplies in an Extreme 8820 switch, follow the steps in [Install a 1600 W Internal DC Power Supply](#) on page 43.

Replace Fan Modules

Before you begin, have the replacement fan module on hand so that you can complete the replacement promptly. The switch can overheat if left without adequate cooling for an extended time.

You can replace fan modules as needed while the switch is operating ("hot swapping").

All installed fan modules must blow air in the same direction and must match the airflow direction of the installed power supplies.

- If the switch's fan tray has a **blue** tab, the airflow is front-to-back. Use a fan module labeled **Air Out**.
- If the switch's fan tray has a **green** tab, the airflow is back-to-front. Use a fan module labeled **Air In**.




Note

The operating-system software cannot display the airflow direction.


Identify 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
---	--

- You can check the top view of the switch to ensure proper groove alignment:

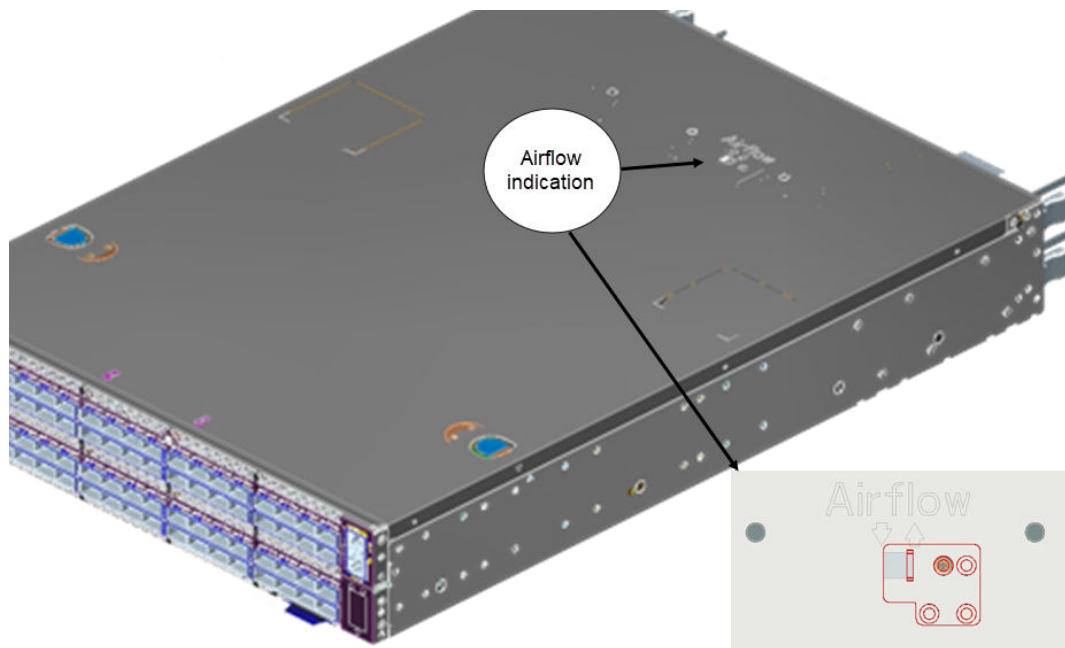


Figure 28: Airflow groove alignment (front-to-back shown)

Replace Fan Modules

1. Gently pull the tab (labeled **Air Out** or **Air In**) on the end of the fan module.

The fan module is held in place by spring clips. As you pull, the clips will disengage and the fan will stop.

2. Slide the fan module out of the switch and set it aside.
3. Verify that the airflow direction on the replacement fan module matches that of the installed fan modules.

Fans with front-to-back airflow have red tabs and are labeled **Air Out**.

Fans with back-to-front airflow have blue tabs and are labeled **Air In**.

4. Carefully slide the replacement fan module into the switch.

**Note**

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

Push until the fan module snaps into place. The fan will automatically start to operate.

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 [Monitor the Device](#) on page 50.

Change Airflow Direction

All installed fan modules must blow air in the same direction and must match the airflow direction of the installed power supplies.

**Note**

The operating-system software cannot display the airflow direction.

1. Remove the PSUs and fan modules by removing the two captive retaining screws and sliding all components out of the switch.

**Note**

The operating-system software cannot display the airflow direction.

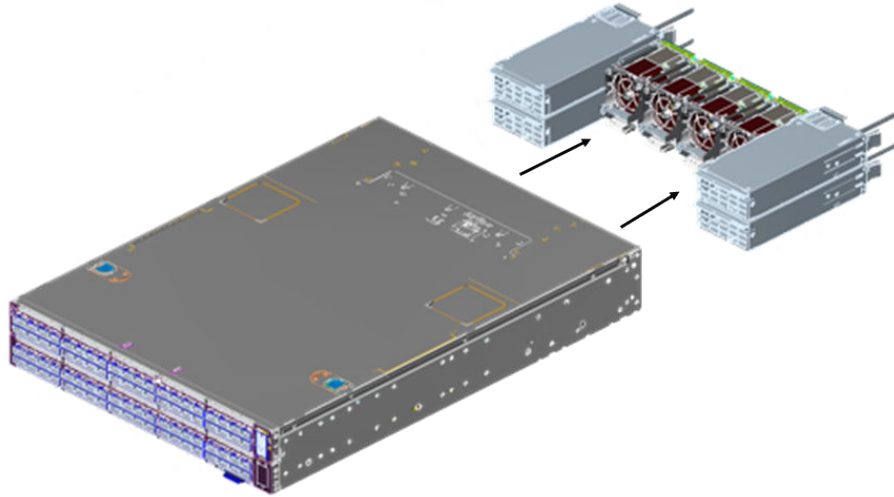


Figure 29: Remove PSUs and fan modules

2. Use a Phillips #1 screwdriver to loosen the chassis screw.

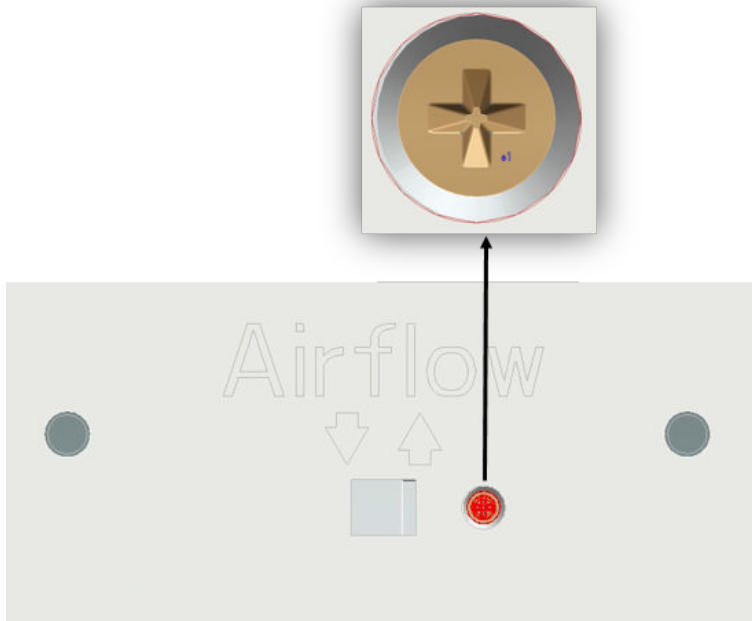


Figure 30: Chassis switch screw front-to-back airflow

3. Use a flathead screwdriver to change the chassis switch. The following figure is an example of changing front-to-back airflow to back-to-front airflow.

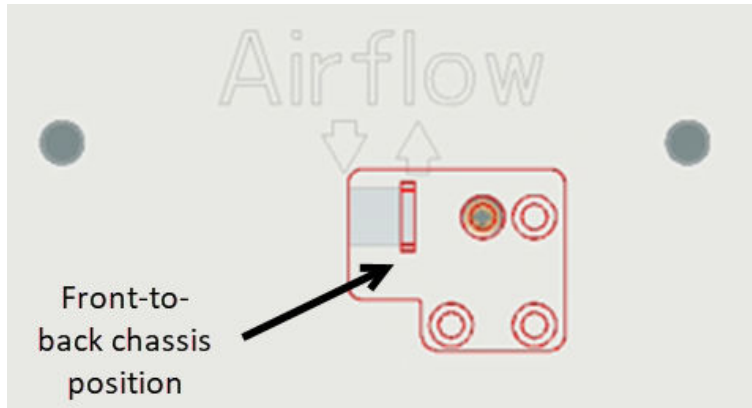


Figure 31: Front-to-back airflow chassis position

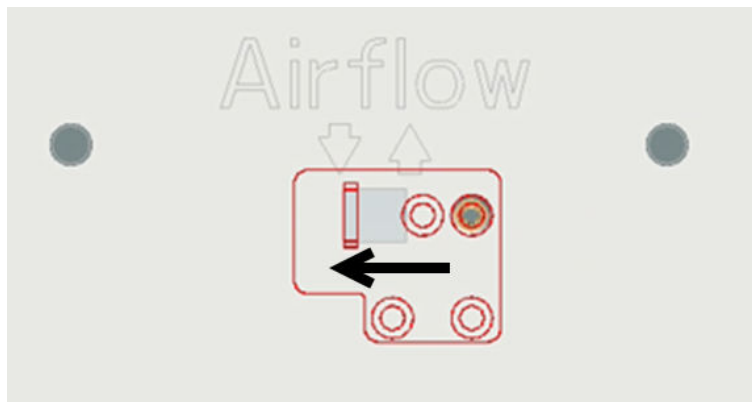


Figure 32: Back-to-front airflow chassis position

4. Use a Phillips #1 screwdriver to tighten the chassis screw.



Figure 33: Chassis screw back-to-front position

5. Carefully slide the PSUs and fan modules back into the switch.

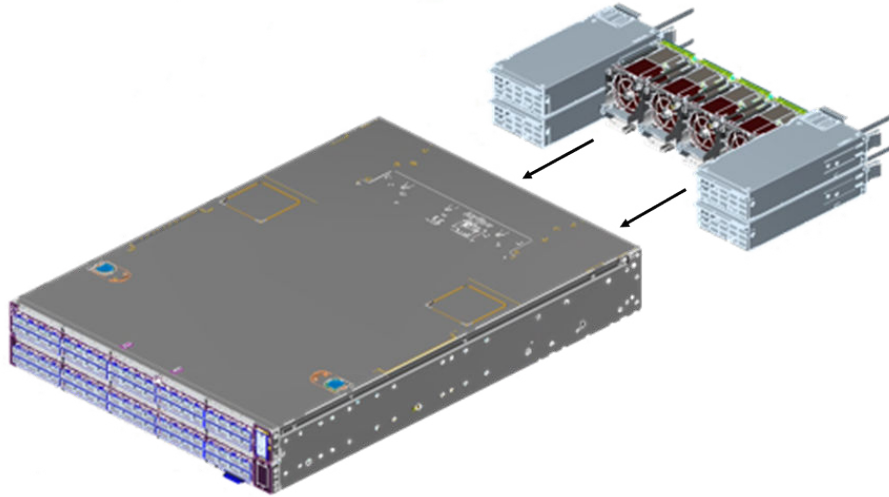


Figure 34: Remove PSUs and fan modules

6. Tighten the two captive retaining screws to secure the components.

Remove the Switch from the Rack

These procedures assume that you have attached the device to the rack as described in one of the following topics:

- [Attach the Device to a Four-Post Rack](#) on page 31
- [Attach the Device to a Two-Post Rack](#) on page 34

Remove or Reposition a Device from a Four-Post Rack

To reposition a device after you have mounted it in four-post rack, follow these steps.

1. Disconnect the device from its power source or sources.
2. Remove all cables and transceivers.
3. Unscrew the mounting brackets from the rack using the thumb screws, while carefully supporting the weight of the device.

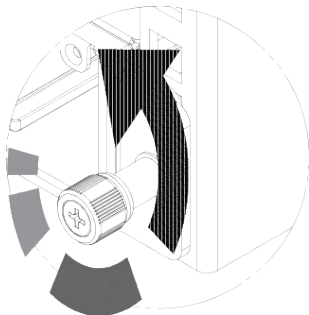


Figure 35: Unscrew Thumb Screws

4. Remove the M5 screws from the rack and the outer rail.

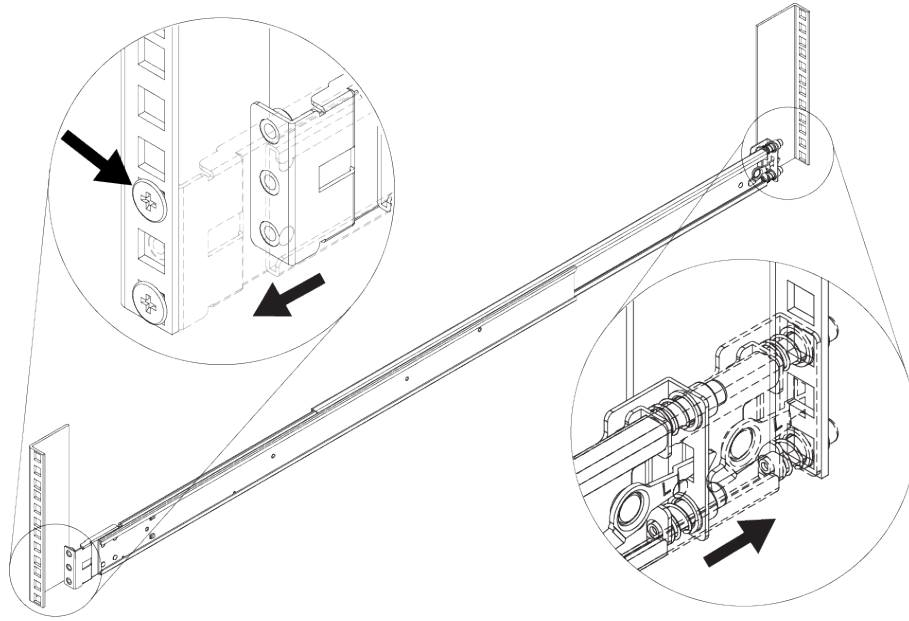


Figure 36: Removing the Outer Rail

5. Reposition the device to the desired location.
6. Attach the outer rail (bracket) to the rack, securing it with the M5 screws.
7. Secure the device to the rack using the thumb screws on the mounting ears.

To remove a device after you have mounted it in four-post rack, follow these steps.

1. Disconnect the device from its power source or sources.
2. Remove all cables and transceivers.
3. To remove a device from a four-post rack, do the following:
 - a. Unsecure the device from the rack by unscrewing the thumb screws on the mounting ears.
 - b. Fully extend the device on the rails and push the disconnect latch to release the device.

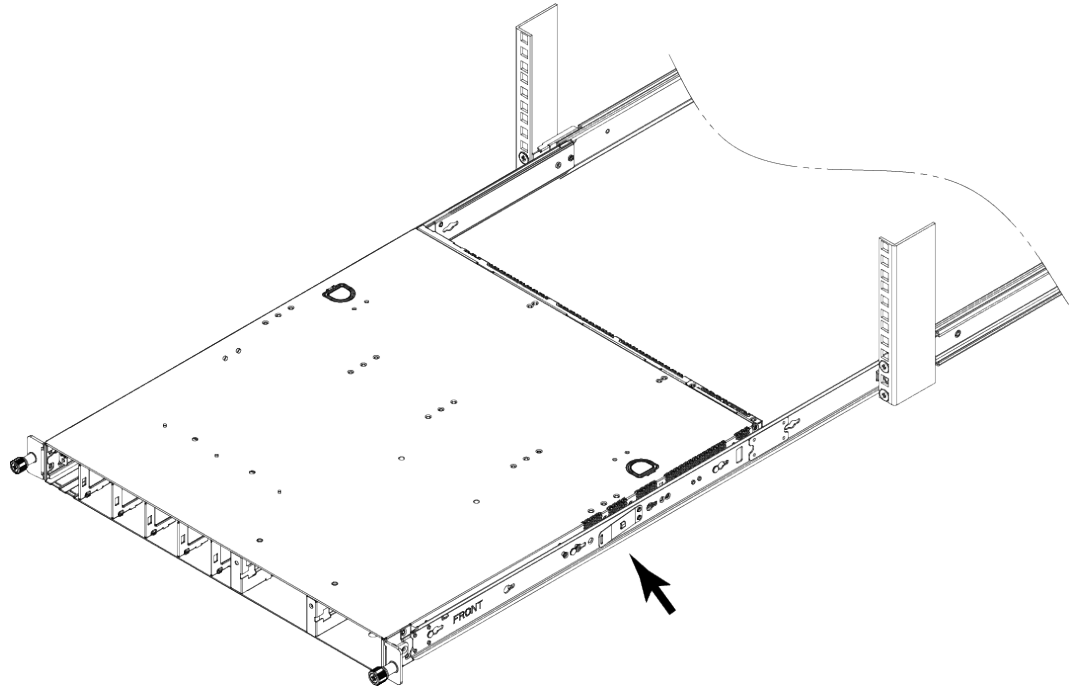


Figure 37: Disconnect latch for removal

- c. Carefully slide the device out of the slider assembly and place it on a flat surface.
You can leave the slider assemblies in place. If you want to remove them, continue with the next step.
- d. On one of the slider assemblies, remove the outer rail (bracket) from the rack by removing the M5 screws.

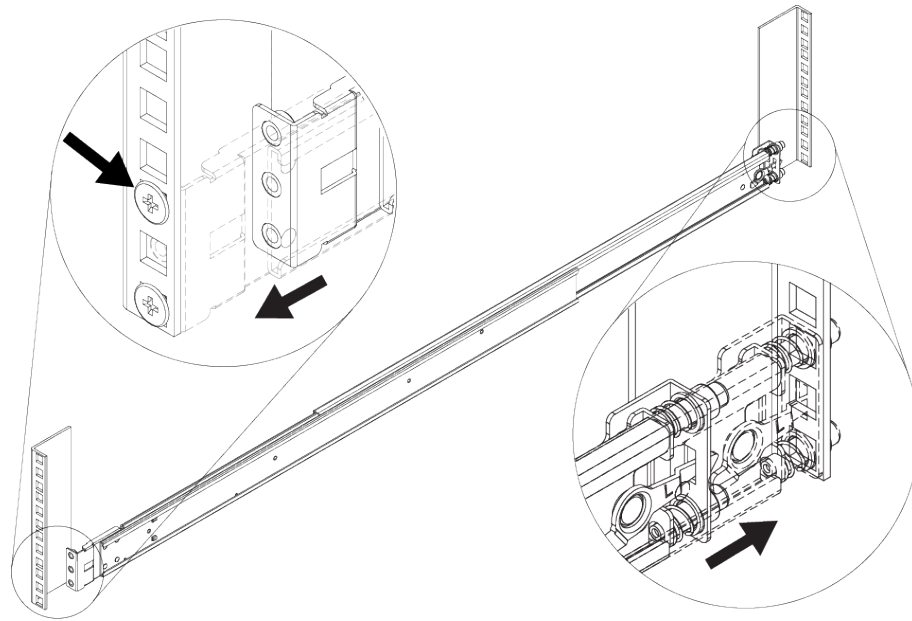


Figure 38: Removing the Outer Rail

- e. Repeat step 3.d to remove the second slider assembly.

Remove a Device from a Two-Post Rack

To remove or reposition a device after you have mounted it in two-post rack, follow these steps.

1. Disconnect the device from its power source or sources.
2. Remove all cables and transceivers.
3. Unscrew the mounting brackets from the rack while carefully supporting the weight of the device.
4. Tilt the device so that the brackets are clear of the rack posts, and carefully lift it out of the rack.

If the device cannot be tilted (because other equipment is mounted directly above and below), remove one or two mounting brackets from the device and then slide the device out.

A best practice is storing the device with the mounting brackets attached if you plan to use it again later,



Extreme 8820 Series Technical Specifications

[Extreme 8820 Software Specifications](#) on page 65

[Weights and Physical Dimensions](#) on page 66

[Fan and Acoustic Noise](#) on page 68

[Power Options](#) on page 69

[Mean Time Between Failures \(MTBF\)](#) on page 69

[CPU, Memory](#) on page 70

[Standards](#) on page 71

[Power Cord Requirements for AC-Powered Switches and AC Power Supplies](#) on page 73

[1600 W Power Supply Technical Specifications](#) on page 74

The Extreme 8820 Series switch includes the following models:

Part number	Description
8820-40C (base unit)	40 100GE/40GE QSFP28 ports, 2 empty power supply slots, 6 empty fan slots.
8820-40C-AC-F	40 100GE/40GE QSFP28 ports, dual AC power supplies, 6 fan units, front-to-back airflow.
8820-40C-AC-R	40 100GE/40GE QSFP28 ports, dual AC power supplies, 6 fan units, back-to-front airflow.
8820-40C-DC-F	40 100GE/40GE QSFP28 ports, dual DC power supplies, 6 fan units, front-to-back airflow.
8820-40C-DC-R	40 100GE/40GE QSFP28 ports, dual DC power supplies, 6 fan units, back-to-front airflow.
8820-80C (base unit)	80 100GE/40GE QSFP28 ports, 4 empty power supply slots, 4 empty fan slots.
8820-80C-AC-F	80 100GE/40GE QSFP28 ports, 4 AC power supplies, 4 fan units, front-to-back airflow.
8820-80C-AC-R	80 100GE/40GE QSFP28 ports, 4 AC power supplies, 4 fan units, back-to-front airflow.
8820-80C-DC-F	80 100GE/40GE QSFP28 ports, 4 DC power supplies, 4 fan units, front-to-back airflow.
8820-80C-DC-R	80 100GE/40GE QSFP28 ports, 4 DC power supplies, 4 fan units, back-to-front airflow.

Extreme 8820 Software Specifications

Item	Extreme 8820 Default Profile	Extreme 8820 Route Profile
Maximum MAC addresses	600,000	190,000
Maximum VLANs	4,096	4,096

Item	Extreme 8820 Default Profile	Extreme 8820 Route Profile
Maximum ACLs (IPv4/IPv6/L2)	4,000 IPv4 /2,000 IPv6 / 2000 L2	4,000 IPv4 /2,000 IPv6 / 2000 L2
Maximum members in a standard LAG	64	64
Maximum number of MCT switches	2	2
Maximum number of Bridge Domains	4,000	4,000
Maximum IPv4 unicast routes	2,000,000	3,500,000
Maximum IPv6 unicast routes	2,000,000	3,500,000
Maximum IPv4 host routes (ARP entries)	102,000	95,000
Maximum IPv6 host routes - route scale	102,000	95,000
Maximum jumbo frame size	9,216 bytes	9,216 bytes
QoS priority queues (per port)	8	8

Weights and Physical Dimensions

Table 11: Extreme 8820 Unpackaged Dimensions

Extreme 8820-40C	Height: 4.31 cm (1.7 in) Width: 45.00 cm (17.72 in) Length (base model): 64.00 cm (25.2 in) Length (40C-AC-F model): 67.00 cm (26.38 in)
Extreme 8820-80C	Height: 8.66 cm (3.41 in) Width: 45.00 cm (17.72 in) Length (base model): 64.00 cm (25.2 in) Length (80C-AC-F model): 67.00 cm (26.38 in)
1600 W AC PSU	Height: 8.64 cm (3.4 in.) Width: 4.01 cm (1.58 in.) Length: 24 cm (9.45 in.)
1600 W DC PSU	Height: 8.64 cm (3.4 in.) Width: 4.01 cm (1.58 in.) Length: 25.5 cm (10.04 in.)
XN-FAN-003-F: Fan unit, front-to-back or XN-FAN-003-R: Fan Unit back-to-front	Height: 4.01 cm (1.58 in.) Width: 4.01 cm (1.58 in.) Length: 13.99 cm (5.51 in.)
XN-FAN-004-F: Fan unit, front-to-back or XN-FAN-004-R: Fan Unit back-to-front	Height: 5.99 cm (2.36 in.) Width: 4.01 cm (2.36 in.) Length: 15.49 cm (6.1 in.)

Table 11: Extreme 8820 Unpackaged Dimensions (continued)

Four-post rack mount kit (included with switch)	Height: 5.00 cm (1.97 in) Width: 7.01 cm (2.76 in) Length: 72.00 cm (28.35 in)
XN-2P-RKMT299 - Two-post rack mount kit for Extreme 8820-40C (separately orderable)	Height: 4.2 cm (1.65 in) Width: 2.4 cm (0.93 in) Length: 12.5 cm (4.92 in)
XN-2P-RKMT300 - Two-post rack mount kit for Extreme 8820-80C (separately orderable)	Height: 8.99 cm (3.54 in) Width: 10.16 cm (4.00 in) Length: 13.00 cm (5.12 in)

Table 12: Extreme 8820 Unpackaged Weight

Extreme 8820-40C (empty)	10.56 kg (23.28 lb)
Extreme 8820-40C with two PSUs and six fans	13.6 kg (29.98 lb)
Extreme 8820-40C with two PSUs, six fans, and 4-post rack mount kit	16.44 kg (36.24 lb)
Extreme 8820-80C (empty)	20.62 kg (45.46 lb)
Extreme 8820-80C with four PSUs and four fans	26.52 kg (58.46 lb)
Extreme 8820-80C with four PSUs, four fans, and 4-post rack mount kit	29.48 kg (64.99 lb)
Extreme 8820-40C fan unit, front-to-back or back-to-front	0.13 kg (0.27 lb)
Extreme 8820-80C fan unit, front-to-back or back-to-front	0.32 kg (0.71 lb)
Extreme 8820 PSU, front-to-back or back-to-front	1.15 kg (2.54 lb)
Extreme 8820-40C four-post rack mount kit (included with switch)	2.66 kg (5.87 lb)
Extreme 8820-80C four-post rack mount kit (included with switch)	2.9 kg (6.39 lb)
XN-2P-RKMT299 - Two-post rack mount kit for Extreme 8820-40C (separately orderable)	0.45 kg (0.99 lb)
XN-2P-RKMT300 - Two-post rack mount kit for Extreme 8820-80C (separately orderable)	0.70 kg (1.54 lb)

Table 13: Extreme 8820 Packaged Dimensions

Extreme 8820-40C (all models)	Height: 19 cm (7.48 in) Width: 59.51 cm (23.43 in) Length: 98.00 cm (38.58 in)
Extreme 8820-80C (all models)	Height: 8.66 cm (9.45 in) Width: 45.00 cm (22.64 in) Length: 64.00 cm (35.04 in)
1600 W AC PSU	Height: 6.5 cm (2.56 in) Width: 21.49 cm (8.46 in) Length: 40 cm (15.75 in)

Table 13: Extreme 8820 Packaged Dimensions (continued)

1600 W DC PSU	Height: 6.5 cm (2.56 in.) Width: 21.49 cm (8.46 in.) Length: 40 cm (15.75 in.)
XN-FAN-003-F: Fan unit, front-to-back or XN-FAN-003-R: Fan Unit back-to-front	Height: 6.5 cm (2.56 in.) Width: 10.59 cm (4.17 in.) Length: 22.6 cm (8.9 in.)
XN-FAN-004-F: Fan unit, front-to-back or XN-FAN-004-R: Fan Unit back-to-front	Height: 9.6 cm (3.78 in.) Width: 10.31 cm (4.06 in.) Length: 21.49 cm (8.46 in.)
XN-2P-RKMT299 - Two-post rack mount kit for Extreme 8820-40C (separately orderable)	Height: 6.3 cm (2.48 in.) Width: 10.39 cm (4.09 in.) Length: 21.79 cm (8.58 in.)
XN-2P-RKMT300 - Two-post rack mount kit for Extreme 8820-80C (separately orderable)	Height: 6.5 cm (2.56 in.) Width: 10.59 cm (4.17 in.) Length: 22.6 cm (8.9 in.)

Table 14: Extreme 8820 Packaged Weight

Extreme 8820-40C (empty)	10.56 kg (23.28 lb)
Extreme 8820-40C (2 PSUs, 6 fans)	13.60 kg (29.98 lb)
Extreme 8820-80C (empty)	45.46 kg (62.74 lb)
Extreme 8820-80C (4 PSUs, 4 fans)	26.52 kg (58.46 lb)
XN-FAN-003-F: Fan unit, front-to-back or XN-FAN-003-R: Fan Unit back-to-front	0.26 kg (0.57 lb)
XN-FAN-004-F: Fan unit, front-to-back or XN-FAN-004-R: Fan Unit back-to-front	0.56 kg (1.22 lb)
1600 W AC PSU	1.52 kg (3.32 lb)
1600 W DC PSU	1.52 kg (3.32 lb)
XN-2P-RKMT299 - Two-post rack mount kit for Extreme 8820-40C (separately orderable)	0.51kg (1.12 lb)
XN-2P-RKMT300 - Two-post rack mount kit for Extreme 8820-80C (separately orderable)	0.83 kg (1.81 lb)

Fan and Acoustic Noise

Refer to the *Extreme 8820 Data Sheet* for up-to-date information

Sound Pressure	Extreme 8820-40C (F-B)	Extreme 8820-40C (B-F)	Extreme 8820-80C (F-B)	Extreme 8820-80C (B-F)
Front	57.3 dBA, re: 20 μPa	61.7dBA, re: 20 μPa	61.3 dBA, re: 20 μPa	69 dBA, re: 20 μPa
Rear	60.2 dBA, re: 20 μPa	65.1 dBA, re: 20 μPa	65.2 dBA, re: 20 μPa	70.8 dBA, re: 20 μPa
Right	50.5 dBA, re: 20 μPa	54.9 dBA, re: 20 μPa	55.5 dBA, re: 20 μPa	62.9 dBA, re: 20 μPa

Sound Pressure	Extreme 8820-40C (F-B)	Extreme 8820-40C (B-F)	Extreme 8820-80C (F-B)	Extreme 8820-80C (B-F)
Left	51.9 dBA, re: 20 μ Pa	55.9 dBA, re: 20 μ Pa	55.9 dBA, re: 20 μ Pa	64 dBA, re: 20 μ Pa
Average	55 dBA, re: 20 μ Pa	59.4 dBA, re: 20 μ Pa	59.5 dBA, re: 20 μ Pa	66.7 dBA, re: 20 μ Pa

Power Options

Extreme 8820	<p>1600 W AC power supply: Part # XN-ACPWR-1600W-F (front-to-back): AC Input: 100-120/200-240 VAC, 50/60 Hz Part # XN-ACPWR-1600W-R (back-to-front): AC Input: 200-240 VAC, 50/60 Hz 7A max. for PSU FSG059 for each PSU for Extreme 8820-40C 4A max. for PSU FSG059 and FSE023 for each PSU for Extreme 8820-40C; for Extreme 8820-80C, min. 2 PSUs provided. PSU Input Socket: IEC 320 C14 Power cord input plug: IEC 320 C13</p>
	<p>1600 W DC power supply: Part # XN-DCPWR-1600W-F (front-to-back) Part # XN-DCPWR-1600W-R (back-to-front) DC Input: +/- 48VDC 15A Max (for PSU FSK010) for each PSU for Extreme 8820-40C +/- 48VDC 15A Max (for PSU FSK010) for each PSU, min. x2 for Extreme 8820-80C</p>

Power and Heat Dissipation

Extreme 8820-80C Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 4 PSU)	Extreme 8820-80C Maximum Power Dissipation (Watts) (Fans high, all ports 100% traffic, 4 PSU)
6592.26 BTU/hr	1932

Extreme 8820-40C Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 2 PSU)	Extreme 8820-40C Maximum Power Dissipation (Watts) (Fans high, all ports 100% traffic, 2 PSU)
3524.74 BTU/hr	1033

Mean Time Between Failures (MTBF)

Device Model	Conditions	Mean Time Between Failures
8820-40C	<ul style="list-style-type: none"> front-to-back airflow 2 power supplies AC/DC (1+1 redundancy) 6 fans (supporting one fan fail) 	225,486 hrs @ 25°C
8820-40C	<ul style="list-style-type: none"> back-to-front airflow 2 power supplies AC/DC (1+1 redundancy) 6 fans (supporting one fan fail) 	198,718 hrs @ 25°C

Device Model	Conditions	Mean Time Between Failures
8820-80C	<ul style="list-style-type: none"> front-to-back airflow 4 power supplies AC/DC (2+2 redundancy) 4 fans (supporting one fan fail) 	153,251 hrs @ 25°C
8820-80C	<ul style="list-style-type: none"> back-to-front airflow 4 power supplies AC/DC (2+2 redundancy) 4 fans (supporting one fan fail) 	129,304 hrs @ 25°C

CPU, Memory

Both models
Intel(R) Atom(TM) CPU C3758 @ 2.20GHzU
2 x 16 Gb DDR4 SO-DIMM memory
2 x 128 Gb SSD non-volatile storage for SLXOS image and configuration storage
16MB BIOS SPI Flash Memory with 16MB redundancy
8 GB Deep Buffer for each BCM88690 MAC ASIC

Standards

Table 15: Safety Standards

North American Safety of ITE	CAN/CSA C22.2 NO. 60950-1-01, CAN/CSA C22.2 NO. 62368-1-14 CAN/CSA C22.2 NO. 60950-1-01, CAN/CSA C22.2 NO. 62368-1-14 UL 60950-1, UL 62368-1
European Safety of ITE	EN 60950-1 EN 62368-1 EN 60825-1 Class 1 (Lasers Safety) 2014/35/EU Low Voltage Directive ETS 300 132-1 Equipment Requirements for AC Power Equipment Derived from DC Sources ETS 300 132-2 Equipment Requirements for DC Powered Equipment ETS 300 253 Facility Requirements ETS 300 253 Facility Requirements
International Safety of ITE	CB Report & Certificate per IEC 60950-1 + National Differences CB Report & Certificate IEC 62368-1 AS/NZS 60950-1 (Australia /New Zealand) CNS 14336-1 (Taiwan) GB 4943.1 (China)

Table 16: EMI/EMC Standards

North America EMC for ITE	FCC 47 CFR part 15 Class A (USA) ICES-003 Class A (Canada)
European EMC standards	EN 55032 Class A EN 55011 EN 55035 EN 61000-3-2 (Harmonics) EN 61000-3-3 (Flicker) EN 300 386 (EMC Telecommunications) 2014/30/EU EMC Directive

Table 16: EMI/EMC Standards (continued)

International EMC certifications	CISPER 32 Class A (International Emissions) AS/NZS CISPER 32 CISPER 24 Class A (International Immunity) IEC 61000-4-2/EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 16kV Air, Criteria B IEC 61000-4-3/EN 61000-4-3 Radiated Immunity 10V/m, Criteria B IEC 61000-4-4/EN 61000 -4-4 Transient Burst, 2kV, Criteria B IEC 61000-4-5/EN 61000-4-5 Surge, 1kV L-L, 2kV L-G, Level 3 Criteria B IEC 61000-4-6/EN 61000-4-6 Conducted Immunity, 0.15-80 Mhz, 10Vrms, 80%AM (1kHz) Criteria A IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C CNS 13438 (Taiwan) GB/T9254-2008 (China)
Country-specific	VCCI Class A (Japan Emissions) ACMA RCM (Australia Emissions) CQC Mark (China) KCC Mark, EMC Approval (Korea) BSMI (Taiwan) ANATEL (Brazil) NoM (Mexico) EAC mark (Russia, Belarus, Kazakhstan, Armenia, Kyrgyzstan) NRCS (South Africa) TEC mark (India)

Table 17: Telecom Standards

EN/ETSI 300 386:2008 (EMC Telecommunications) EN/ETSI 300 019 (Environmental for Telecommunications) MEF9 and MEF14 certified for EPL, EVPL, and ELAN

Table 18: IEEE Media Access Standards

802.3-2005 CSMA/CD Access Method and Physical Layer Specifications 802.3ab 1000BASE-T 802.3ae 10 Gigabit Ethernet 802.3u 100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100Mbps with Auto-Negotiation 802.3x Flow Control 802.3z 1000BASE-X Gigabit Ethernet over fiber optic at 1 Gbps 802.3ad Link Aggregation 802.1q Virtual Bridged LANs 802.1d MAC Bridges 802.1w Rapid STP 802.1s Multiple Spanning Trees 802.1ag Connectivity Fault Management(CFM) 802.3.bj 100 Gigabit Ethernet 802.1ab Link Layer Discovery Protocol 802.1x Port-Based Network Access Control
--

Table 18: IEEE Media Access Standards (continued)

802.3ah Ethernet in the First Mile Link OAM3 ITU-T G.8013/Y.1731 OAM mechanisms for Ethernet G.8032

Environmental Standards

Operating conditions	Operating temperature and operating altitude for airflow front to back: 0°C to 40°C (32°F to 104°F) / 6.000 ft (1,800m) Operating temperature and operating altitude for airflow back to front: 0°C to 25°C (32°F to 77°F) / 6.000 ft (1,800m) Humidity: 5% to 95%, at 40°C (104°F), non-condensing Operational shock (half sine): 30G, Duration=11 ms. (Half sine), 3 axis. Operational random vibration: 3-500Hz, 1.5Grms, 120mins, z-axis.
Storage & transportation conditions (packaged)	Storage temperature: -40°C to 70°C (-40°F to 158°F) Storage and transportation humidity: 95% maximum relative humidity, non-condensing Storage altitude: 15,000 ft (4,500 m) maximum Packaged shock (half sine): 3 axes, 100 shocks each axis (+/-) <50 kg: Half-Sine, 180 m/s ² (18g), 6ms >50kg: Half-Sine, 100 m/s ² (10g), 11ms Packaged random vibration: 5-20 Hz @ .01 g ² /Hz (PSD). 20-200 Hz @ -3 (dB/Oct (PSD). 30 minutes per each axis.

Power Cord Requirements for AC-Powered Switches and AC Power Supplies

An AC power cord is not included with the AC power supply.

Power cords used with AC-powered switches or AC power supplies must meet the following requirements:

- The power cord must be agency-certified for the country of use.
- The power cord must have an IEC320-C13 connector for connection to the switch or power supply.
- The power cord must have an appropriately rated and approved wall plug applicable to the country of installation.
- For cords up to 6 feet (2 m) long, the wire size must be 18 AWG (.75 mm²) minimum; over 6 feet, the minimum wire size is 16 AWG (1.0 mm²).

The power cords for switches that use either the 1100 W or 715 W power supplies are keyed with a “notch” to ensure the proper orientation when plugged in. These cords are of 3x14 AWG.

For details about obtaining AC power cords for use in your country, refer to <http://www.extremenetworks.com/product/powercords/>.

1600 W Power Supply Technical Specifications

Two 1600 W AC power supply options, with front-to-back or back-to-front airflow, are available for the Extreme 8820.

- 1600W AC power supply - front-to-back airflow (part no. XN-ACPWR-1600W-F)
- 1600W AC power supply - back-to-front airflow (part no. XN-ACPWR-1600W-R)

Two 1600 W DC power supply options, with front-to-back or back-to-front airflow, are available for Extreme 8820.

- 1600W DC power supply - front-to-back airflow (part no. XN-DCPWR-1600W-F)
- 1600W DC power supply - back-to-front airflow (part no. XN-DCPWR-1600W-R)

The Extreme 8820-40C supports up to two power supplies, which provides (1+1) hot-swappable, redundant load sharing. The Extreme 8820-80C supports up to four power supplies, which provides (2+2) hot-swappable, redundant load sharing.



Note

If the Extreme 8820-80C is configured with two AC power supplies and two DC power supplies, and one AC power supply faults, neither DC power supply is activated. If the one AC power supply does not provide enough power for the switch, the switch shuts down. Manual intervention is required.

The following table describes the power supply behavior based on fault conditions, when two AC and two DC power supplies are installed.

Installed PSUs	Default PSU status	1 AC PSU fails	2 AC PSUs fail	1 DC PSU fails	1 AC and 1 DC PSU fails
2 AC and 2 DC	2 AC on, 2 DC off	1 AC on, 2 DC off*	2 DC on	2 AC on	1 AC on, 1 DC off

Table 19: 1600 W Power Supplies: Unpackaged Dimensions

1600 W power supply – AC front-to-back or back-to-front airflow	Height: 4.01 cm (1.58 in) Width: 8.63 cm (3.4 in) Depth: 24.00 cm (9.45 in)
1600 W power supply – DC front-to-back airflow or back-to-front airflow	Height: 4.01 cm (1.58 in) Width: 8.63 cm (3.4 in) Depth: 25.50 cm (10.04 in)

Table 20: 1600 W Power Supplies: Unpackaged Weight

1600 W power supplies – all models, front-to-back and back-to-front airflow	1.15 kg (2.53 lb)
---	-------------------

Table 21: 1600 W Power Supplies: Packaged Dimensions

1600 W power supplies – all models, front-to-back and back-to-front airflow	Height: 6.50 cm (2.56 in) Width: 21.48 cm (8.46 in) Depth: 40.00 cm (15.75 in)
---	--

Table 22: 1600 W Power Supplies: Packaged Weight

1600 W power supplies – all models, front-to-back and back-to-front airflow	1.50 kg (3.31 lb)
---	-------------------

Table 23: Power Specifications (AC Power Supplies)

Voltage input range	90 to 264 V ~
Nominal input ratings	For FSG059: AC 100-120V~, 50/60Hz, 13A max.; 200-240V ~, 50/60Hz, 10A max. For FSE023: 200-240V~, 50/60Hz, 10A max.
Nominal input current at full loads	10 A at 90 V ~ (low-line) 3.7 A at 230 V ~ (high-line)
Line frequency range	47 to 63 Hz
Maximum inrush current	35 A

Table 23: Power Specifications (AC Power Supplies) (continued)

Output	For FSG059: +12V/133A (for input 200-240VAC or 240VDC), +12V/83A (for input 100-120VAC), +12Vsb/2.5A. Total output power not to exceed 1600W (200-240VAC or 240Vdc). Total output power not to exceed 1000W (100-120VAC). For FSG023: +12V/133A, +12Vsb/2.5A. Total output power not to exceed 1600W.
Power supply input socket	IEC 320 C14
Power cord input plug	IEC 320 C13
Power cord wall plug	Refer to Power Cord Requirements for AC-Powered Switches and AC Power Supplies on page 73.
Power supply cord gauge	16 AWG (1.0 mm ²) over 6 feet
Efficiency	Low Line: 88% at 50% load and 86% at 100% load High Line: 90% at 50% and 100% loads

Table 24: Power Specifications (DC Power Supplies)

Nominal input	-48 to -60 VDC
DC Voltage input range	+/-39VDC to +/-72VDC, 50A max.
Inrush Current	21 A peak
Maximum wire size	14 AWG (1.5 mm ² copper stranded).
DC Output	+12.2V/131A, +12Vsb/2.5A
Power (W)	1600 W

Table 25: Environmental Specifications (AC and DC Power Supplies)

Operating temperature (front-to-back airflow)	0°C to 40°C (normal operation)
Operating temperature (back-to-front airflow)	0°C to 25°C (normal operation)
Storage temperature	-40°C to 70°C
Operating humidity	5% to 95% relative humidity, non-condensing
Operational shock	30 m/s ² (3 G)



Safety and Regulatory Information

- [General Safety Precautions on page 77](#)
- [Considerations Before Installing on page 78](#)
- [Maintenance Safety on page 79](#)
- [Fiber Optic Ports and Optical Safety on page 79](#)
- [Cable Routing for LAN Systems on page 80](#)
- [Install Power Supply Units and Connect Power on page 80](#)
- [Select Power Supply Cords on page 81](#)
- [Battery Notice on page 82](#)
- [Battery Warning - Taiwan on page 82](#)
- [EMC Warnings on page 82](#)
- [Japan \(VCCI Class A\) on page 83](#)
- [Korea EMC Statement on page 83](#)



Warning

Read the following safety information thoroughly before installing Extreme Networks products. Failure to follow this safety information can lead to personal injury or damage to the equipment.

Only trained and qualified service personnel (as defined in IEC 60950-1 and AS/NZS 3260) should install, replace, or perform service to Extreme Networks switches and their components. Qualified personnel have read all related installation manuals, have the technical training and experience necessary to be aware of the hazards to which they are exposed in performing a task, and are aware of measures to minimize the danger to themselves or other persons.

If you are located in the United States, install the system in accordance with the U.S. National Electrical Code (NEC).

General Safety Precautions

Follow these guidelines:

- Do not try to lift objects that you think are too heavy for you.
- When you install equipment in a rack, load heavier devices in the lower half of the rack first to avoid making the rack top-heavy.
- Use only tools and equipment that are in perfect condition. Do not use equipment with visible damage.

- Route cables in a manner that prevents possible damage to the cables and avoids causing accidents, such as tripping.
- Do not place a monitor or other objects on top of the equipment. The chassis cover is not designed to support weight.
- To reduce the risk of fire, use only #26 AWG or larger telecommunications line cord. Use only copper conductors.
- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor.

Considerations Before Installing

Consider the following items before you install equipment.

- For equipment designed to operate in a typical Telco environment that is environmentally controlled, choose a site that has the following characteristics:
 - Temperature-controlled and humidity-controlled, such that the maximum ambient room temperature shall not exceed 50°C (122°F).
 - Clean and free from airborne materials that can conduct electricity.
 - Well ventilated and away from sources of heat including direct sunlight.
 - Away from sources of vibration or physical shock.
 - Isolated from strong electromagnetic fields produced by electrical devices.
- For equipment designed to be installed in environments that are not environmentally controlled, such as outdoor enclosures, see the product data sheet or for environmental conditions, temperature, and humidity.
- Establish at least 3 inches clearance on all sides for effective ventilation. Do not obstruct the air intake vent on the front, side, or rear ventilation grills. Locate the system away from heat sources.
- Make sure that your equipment is placed in an area that accommodates the power consumption and component heat dissipation specifications.
- Make sure that your power supplies meet the site DC power or AC power requirements of all the network equipment.
- Racks for Extreme Networks equipment must be permanently attached to the floor. Failure to stabilize the rack can cause the rack to tip over when the equipment is removed for servicing.
- Do not operate the system unless all modules, faceplates, front covers, and rear covers are in place. Blank faceplates and cover panels are required for the following functions:
 - Preventing exposure to hazardous voltages and currents inside the equipment
 - Containing electromagnetic interference (EMI) that might disrupt other equipment
 - Directing the flow of cooling air through the equipment
- Ultimate disposal of this product should be handled according to all national laws and regulations.

Maintenance Safety

When you perform maintenance procedures on Extreme Networks equipment, follow these recommendations:

- Use only authorized accessories or components approved for use with this system. Failure to follow these instructions may damage the equipment or violate required safety and regulations.
- This system contains no customer serviceable components. Do not attempt to repair a chassis, power supply, module, or other component. In the event of failure, return the defective unit to Extreme Networks for repair or replacement, unless otherwise instructed by an Extreme Networks representative.
- To remove power from the system, you must unplug all power cords from wall outlets. The power cord is the disconnect device to the main power source.
- Disconnect all power cords before working near power supplies, unless otherwise instructed by a product-specific maintenance procedure.
- Replace a power cord immediately if it shows any signs of damage.
- When you work with optical devices, power supplies, or other modular accessories, put on an ESD-preventive wrist strap to reduce the risk of electronic damage to the equipment. Connect the other end of the strap to an appropriate grounding point on the equipment rack or to an ESD jack on the chassis if one is provided. Leave the ESD-preventive wrist strap permanently attached to the equipment rack or chassis so that it is always available when you need to handle components that are sensitive to ESD.
- Install all cables in a manner that avoids strain. Use tie wraps or other strain relief devices.

Fiber Optic Ports and Optical Safety

The following safety warnings apply to all optical devices used in Extreme Networks equipment that are removable or directly installed in an I/O module or chassis system.

Such devices include but are not limited to gigabit interface converters (GBICs), small form factor pluggable (SFP) modules (or mini-GBICs), QSFP+ modules, XENPAK transceivers, and XFP laser optic modules.



Warning

Laser optic modules become very hot after prolonged use. Take care when removing a laser optic module from the module or option card. If the laser optic module is too hot to touch, disengage the laser optic module and allow it to cool before removing it completely.

When working with laser optic modules, always take the precautions listed below to avoid exposure to hazardous radiation.

- Never look at the transmit LED/laser through a magnifying device while the transmit LED is powered on.
- Never look directly at a fiber port on the switch or at the ends of a fiber cable when they are powered on.
- Invisible laser radiation can occur when the connectors are open. Avoid direct eye exposure to the beam when optical connections are unplugged.
- Never alter, modify, or change an optical device in any way other than suggested in this document.

Cable Routing for LAN Systems

Extreme Networks equipment meets the requirements for LAN system equipment.

LAN systems are designed for intra-building installations; that is, cable runs between devices must be in the same building as the connected units, except under the conditions listed in the next paragraph.

As allowed in the USA by the National Electrical Code (NEC), this equipment can be connected between buildings if any one of the following conditions is true:

- Cable runs between buildings are less than 140 feet long.
- Cable runs between buildings are directly buried.
- Cable runs between buildings are in an underground conduit, where a continuous metallic cable shield or a continuous metallic conduit containing the cable is bonded to each building grounding electrode system.



Caution

Failure to follow these requirements for cable routing conditions may expose the user to electrical shock and expose the unit to damage that can cause errors.



Warning

The Ethernet ports of the equipment and its sub-assemblies are suitable only for intra-building connections (within the same building) or for connections to unexposed wiring or cabling. (See the conditions listed above.) The Ethernet ports of this equipment or its sub-assemblies must not be metalically connected to interfaces that connect to the outside plant (OSP) or its wiring. Ethernet interfaces are designed for use only as intra-building interfaces (described as Type 2 or Type 4 ports in GR-1089-CORE, Issue 6) and require isolation from the exposed OSP wiring. The addition of Primary Protectors is not sufficient protection to connect these interfaces metalically to OSP wiring.

This warning does not apply to T1/E1 ports because T1/E1 ports have built-in isolation and surge protection that allows them to be connected to OSP wiring.

Install Power Supply Units and Connect Power

For the ratings and power input requirements of each power supply unit, see "Technical Specifications" or the data sheet for the power supply at www.extremenetworks.com.



Warning

Be sure to satisfy the requirements listed in this section when you install Extreme Networks power supplies or connect power.

When you install any power supply:

- Do not use excessive force when you insert a power supply into the bay.
- Do not attempt to open the power supply enclosure for any reason; the power supply does not contain user-serviceable parts. In the event of failure, return the defective power supply to Extreme Networks for repair or replacement.
- Do not put your hand into an open power supply bay when a power supply is not present.

- Before you work on equipment that is connected to power lines, remove all jewelry, including watches. Metal objects heat up when they are connected to power and ground and can cause serious burns or weld the metal object to the terminals.
- An electrical arc can occur when you connect or disconnect the power with power applied. This could cause an explosion in hazardous area installations. Be sure that power is removed from the device.
- When you install or replace equipment, always make the ground connection first and disconnect the ground connection last.

When you install DC power supplies or connect DC power:

- Extreme Networks DC power supplies do not have switches for turning the unit on and off. Make sure that the DC circuit is de-energized before connecting or disconnecting the DC power cord at the DC input power socket.
- Connect the system or power supply only to a DC power source that complies with the safety extra-low voltage (SELV) requirements in IEC 60950-based safety standards.

**Note**

Because building codes vary worldwide, consult an electrical contractor to ensure proper equipment grounding and power distribution for your specific installation and country.

**Warning**

Extreme Networks power supplies do not have switches for turning the unit on and off. Disconnect all power cords to remove power from the device. Make sure that these connections are easily accessible.

Extreme Networks alimentations n'ont pas de contact pour mettre l'appareil sous et hors tension. Débranchez tous les cordons d'alimentation pour couper l'alimentation de l'appareil. Assurez-vous que ces connexions sont facilement accessibles.

Select Power Supply Cords

A power cord is not included in the product box.

You can purchase a power cord for your product and for your specific country from your local Extreme Networks Channel Account Manager or Sales Manager, or you can purchase a cord from your local supplier. Requirements for the power cord are listed in the Technical Specifications for your product.

To locate a Sales Manager or Partner in your region, visit www.extremenetworks.com/partners/where-to-buy.

**Note**

This equipment is not intended to be directly powered by power distribution systems where phase-phase voltages exceed 240 VAC (2P+PE), such as those used in Norway, France, and other countries. For these applications, use a transformer to step down the voltage to < 240 VAC from phase-phase, or make a connection to a (P+N+PE) power distribution where voltages do not exceed 240 VAC.

All installations should confirm that the product is reliably grounded according to the country's local electrical codes.

Battery Notice



Warning: This product contains a battery used to maintain product information. If the battery should need replacement it must be replaced by Service Personnel. Please contact Technical Support for assistance.

Risk of explosion if battery is replaced by an incorrect type. Dispose of expended battery in accordance with local disposal regulations.



Attention: Ce produit renferme une pile servant à conserver les renseignements sur le produit. Le cas échéant, faites remplacer la pile par le personnel du service de réparation. Veuillez communiquer avec l'assistance technique pour du soutien.

Il y a risque d'explosion si la pile est remplacée par un type de pile incorrect. Éliminez les piles usées en conformité aux règlements locaux d'élimination des piles.

Battery Warning - Taiwan

About This Task

警告

如果更換不正確之電池型式會有爆炸的風險，
請依製造商說明書處理用過之電池。

EMC Warnings

Taiwan BSMI Warning

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。

China CQC Warning

警告使用者:

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。

在这种情况下，可能需要用户对干扰采取切实可行的措施。

Japan (VCCI Class A)



Warning

This is a Class A product based on the standard of the VCCI Council. If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

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

Korea EMC Statement

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



Index

Numerics

- 1600 W AC power supply
 - features 16
 - LEDs 54
 - specifications 75
- 1600 W DC power supply
 - connecting ground wire 44
 - connecting to source voltage 45
 - installing 43–45
 - LEDs 55
 - specifications 76
- 8820 Series
 - LEDs 50
 - technical specifications 65
- 8820 series switches
 - features 10, 11
- 8820 Series switches
 - power supplies 74
- 8820-40C switch
 - features 11
- 8820-80C switch
 - features 13

A

- AC power
 - connecting to switch 46
 - requirements for cords 73
- AC power supply
 - installing 40
 - LEDs 54
 - replacing 56
- access 22
- Air In (on fan module) 56–58
- Air Out (on fan module) 56–58
- airflow 56–58
- alert, power supply 16
- amperage
 - calculating for UPS 27
- announcements 8
- ANSI standards 27

B

- back-to-front cooling 56–58
- battery notice 82
- brackets, for mounting in rack 30, 31, 34, 61, 64
- building codes 21

C

- cable
 - ANSI standards 27
 - fiber optic 47
 - for switch ports 47
 - network interface 47
 - optical 40
- Changing
 - airflow 58
- commercial building standards 27
- components
 - optional 40
- configuring the switch 49
- connecting DC power
 - 1600 W DC power supply 45
- connecting power 46
- console port
 - 8820 series 10, 11
- conventions
 - notice icons 6
 - text 6
- cooling 56–58
- cords
 - requirements 73
 - selecting 81

D

- DC power
 - connecting to switch 45, 46
- DC power supply
 - connecting ground wire 44
 - LEDs 55
 - replacing 56
- design standards 27
- documentation
 - feedback 8
 - location 7

E

- ears, see mounting brackets
- electric power
 - connecting to switch 46
- electrical codes 21
- electrostatic discharge, see ESD
- environmental requirements
 - building codes 21
 - electrical codes 21

- environmental requirements (*continued*)
 - electrostatic discharge (ESD) 23
 - humidity 23
 - temperature 22
 - wiring closet 22
- equipment
 - installing 29
 - tools needed to install 30
- equipment rack
 - grounding 24
 - mechanical recommendations 24
 - mounting holes 24
 - securing 25
 - service access 24
 - space requirements 24
- ESD
 - system protection 23
- establish a serial connection 48

F

- fan
 - airflow 56–58
 - replacing 56, 57
- fan modules
 - features 18
- features
 - 8820-40C switch 11
 - 8820-80C switch 13
- feedback 8
- fiber optic cable
 - connecting 47
- first switch login 49
- front-to-back cooling 56–58

G

- ground wire
 - connecting 44
- grounding
 - 1600 W DC power supply 44
 - racks 24
 - requirements 27
 - wiring closet 22

H

- humidity 23

I

- industry standards 27
- initial switch login 49
- installing
 - 1600 W AC power supply 40
 - 1600 W DC power supply 43–45
 - connecting power 46
 - DC power supply 44
 - in four-post rack 30, 31, 34

- installing (*continued*)
 - in two-post rack 30, 31, 34
 - internal power supply 56
 - optical transceivers 40
 - optional components 40
 - personnel 30
 - preparing 20, 30
 - safety information 29
 - switches 29–31, 34
 - tools 30
 - using four-post mounting rails kit 30, 31, 34
 - using mounting brackets) 30, 31, 34

K

- kit, see mounting kit

L

- LEDs
 - 1600 W AC power supply 54
 - 1600 W DC power supply 55
 - 8820 Series 50
- logging in to the switch 49

M

- management port
 - 8820 series 10, 11
- mounting brackets
 - attaching to four-post rack 30, 31, 34
 - removing 61, 64
- mounting kit
 - four-post rack 30, 31, 34
 - two-post rack 30, 31, 34

N

- network interface connections 47
- notices 6

O

- operating environment requirements 22
- optical cables
 - installing 40
- optical transceivers
 - installing 40
- optional components
 - installing 40

P

- planning
 - site 20
- pluggable transceivers, see optical transceivers
- power
 - connecting to switch 45, 46
 - requirements for cords 73

- power cords
 - selecting 26, 81
- power requirements
 - power supply 25
- power supply unit (PSU)
 - 1600 W AC 16, 40
 - 1600 W DC 43-45
 - alert 16
 - installing 40
 - internal 56
 - power requirements 25
 - replacing 56
 - specifications 74
- product announcements 8

R

- rack
 - attaching switch 30, 31, 34
 - removing switch 61, 64
- rack specifications
 - grounding 24
 - securing to floor 25
 - space requirements 24
- rails, for mounting switch 30, 31, 34
- regulatory information 77
- removing
 - fan module 56, 57
 - from rack 61, 64
- replacing
 - fan module 56, 57
 - internal power supply 56
- restricted 22
- restricted access 22

S

- safety
 - precautions when installing 29
 - requirements 77
- serial connection
 - establish 48
- service access to the rack 24
- site planning 20
- site preparation 30
- SLX
 - initial login 49
- space requirements, rack 24
- specifications
 - 1600 W AC power supply 75
 - 1600 W DC power supply 76
 - equipment racks 24
- standards
 - cabling 27
 - commercial building 27
 - design 27
 - grounding 27
- support, see technical support
- switches

- switches (*continued*)
 - connecting power 46
 - initial login 49
 - installing 29
 - installing in four-post rack 30, 31, 34
 - installing in two-post rack 30, 31, 34
 - installing optional components 40
 - removing from rack 61, 64
 - safety information 29
 - tools needed to install 30

T

- technical specifications
 - 8820 Series 65
- technical support
 - contacting 8
- temperature 22
- tools for installing equipment
 - switches 30
- transceivers, see optical transceivers
- transition time
 - UPS 27

U

- UPS (uninterruptible power supply)
 - requirements 26
 - selecting 26, 27
 - transition time 27

W

- warnings 6
- wire
 - connecting 44
- wiring closet
 - electrostatic discharge (ESD) 23
 - floor coverings 22
 - grounding 22
 - humidity 23
 - rack, securing 25
 - temperature 22
- wiring terminals 24