8720 Series Installation Guide

Setup and Configuration

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April 2026

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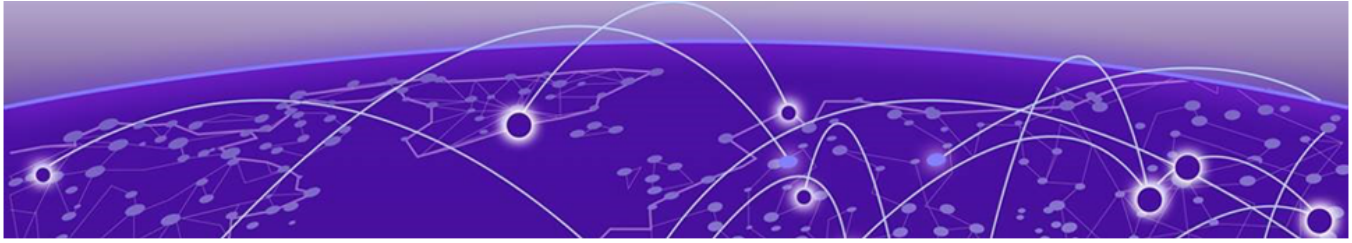

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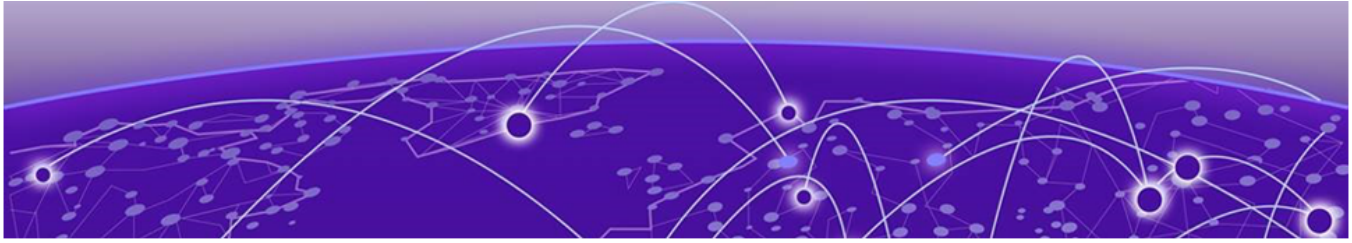

Abstract

This installation guide for the Extreme® 8720 Series switches, Revision AG (April 2026), provides advanced technical guidance for deploying, configuring, and maintaining high-performance fixed-form-factor switches in service provider, enterprise core, and data center environments. It covers the Extreme 8720-32C platform, detailing hardware architecture with 32 × 40/100 GbE QSFP+/QSFP28 ports, breakout support for 10/25 GbE lanes, redundant hot-swappable fan and 750 W AC/DC power supply modules, airflow models, and thermal operating limits. The guide includes structured procedures for site preparation, rack mounting, grounding, cabling, power provisioning, and initial system activation, including first-time login and credential enforcement on Extreme OS ONE and Extreme SLX-OS. Usage scenarios emphasize scalable core and aggregation deployments requiring high throughput, reliability, and flexible management. Management and automation options via CLI, REST, NETCONF/YANG, SNMP, and lights-out management are summarized, alongside security considerations such as password hardening and restricted-access requirements for DC power systems. Troubleshooting sections provide diagnostic LED definitions, component replacement steps, and POST behavior, while detailed technical specifications, environmental requirements, and regulatory compliance guidance support informed deployment planning by experienced network administrators.

Introduction to the Extreme 8720 Installation Guide

This guide is intended for use by network administrators responsible for installing and setting up network equipment. It assumes a basic working knowledge of:

- Local area networks (LANs)
- Ethernet concepts
- Ethernet switching and bridging concepts
- Routing concepts
- Simple Network Management Protocol (SNMP)
- Basic equipment installation procedures

See the *Extreme OS ONE SR Deployment Guide* and the *Extreme OS ONE Command Reference* for your version of the Extreme OS ONE operating system for information about configuring Extreme Networks switches if you are running Extreme OS ONE.

See the *Extreme SLX-OS User Guide* and the *Extreme SLX-OS Command Reference Guide* for your version of the Extreme SLX-OS operating system for information about configuring Extreme Networks switches if you are running Extreme SLX-OS.

Note
If the information in an installation note or release note shipped with your Extreme Networks equipment differs from the information in this guide, follow the installation or release note.

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 Extreme Networks switches, the product is referred to as *the switch*.

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
`screen displays`	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words *enter* and *type*	When you see the word *enter* 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 *type*.
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**
Words in italicized type	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.
italic text	Italic text indicates variable content.

Table 3: Command syntax (continued)

Convention	Description
`[ ]`	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, *member*[*member*...].
\	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.

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

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

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)

- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

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

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3. Select a product for which you would like to receive notifications.
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Current Product Documentation
Release Notes
Hardware and Software Compatibility for Extreme Networks products
Extreme Optics Compatibility
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- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, email us at Product-Documentation@extremenetworks.com.

Provide as much detail as possible including the publication title, topic heading, and page number (if applicable), along with your comments and suggestions for improvement.

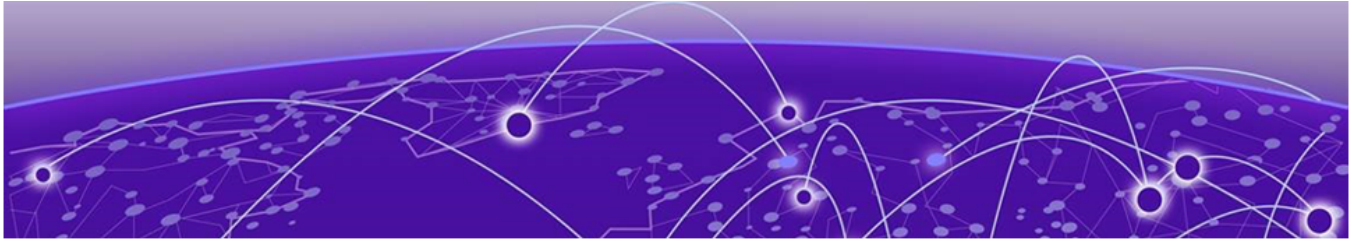
New in this Guide

The following sections describe the recent documentation revisions for this guide. Use this information to locate the latest updates.

April 2026 Revisions

The following table lists the documentation updates for April, 2026.

Description	Section
Extreme OS ONE operating system support	Introduction to the Extreme 8720 Installation Guide on page vii Extreme 8720 Overview on page 13 Manage Your Switch on page 18 Login for the First Time on Extreme OS ONE on page 52



Extreme 8720 Overview

Extreme 8720 Switch Features on page 15

The Extreme 8720 switch is a high-performance feature-rich, fixed form factor switch built for service providers and data centers. The switch offers a versatile and efficient core/aggregation switching functionality for both campus and data center environments. The Extreme 8720 switch provides 32 40/100GbE QSFP+/QSFP28 ports and 128 25/10 GbE ports (using breakout cables) with 32 MB of packet buffer.

The Extreme 8720 switch runs Extreme Networks Extreme OS ONE operating system and the Extreme SLX-OS operating system.

Extreme OS ONE

Extreme OS ONE ™ is a cloud-native network operating system (OS) based on a microservices architecture featuring in-service maintainability and is fully API driven for management programmability. Extreme OS ONE is a high-performance network operating system designed for data center, service provider, and enterprise networking environments.

Management

The switch supports connections using the RJ45 serial console port or the Ethernet management port to view and manage the switch configuration. For more information on switch connection methods, see Manage Your Switch. For switch connection details, see Connect to a Management Console on page 51.

After connecting your switch, 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	
Command line interface (CLI)	Ethernet or serial connection	N/A	*Extreme SLX-OS Command Reference*
REST or NETCONF/ YANG APIs	Ethernet connection	Yes	*Extreme SLX-OS REST API Guide* *Extreme SLX-OS RESTCONF Guide* *Extreme SLX-OS NETCONF Operations Guide* *Extreme SLX-OS YANG Reference Guide*
Standard SNMP applications	Ethernet or serial connection	N/A	

Note
There is also a Type A USB 2.0 port labeled USB on the front panel that can interface with USB storage devices.

Cooling

Each switch is cooled by hot-swappable field replaceable fan modules. The switch supports both front-to-back and back-to-front airflow for switch cooling. Switch fans are not responsible for cooling the power supplies; power supplies have integrated cooling fans that operate independently of the switch fan. Fans are ordered separately for the base 8720-32C switch. Fans are included with other switches.

For more information about the fan modules used in the switch, see Fan Modules for Use with Your Switch on page 20.

Power Supplies

Each switch supports up to two hot-swappable modular AC or DC power supplies that provide enough power for the needs of the switch. Power supplies have integrated cooling fans that operate independently of the switch fans for power supply cooling and are not responsible for cooling the switch. Power supplies are ordered separately for the base 8720-32C switch. Power supplies are included with other switches.

For more information about the power supplies used in the switch, see Power Supplies for Use with Your Switch on page 22.

Operating Temperatures

The operating temperatures and operating altitude for front-to-back airflow models are:

- 0°C (32°F) to 50°C (122°F) at sea level
- 0°C (32°F) to 45°C (113°F) up to 1800 m (6000 ft)
- 0°C (32°F) to 40°C (104°F) above 1800 m (6000 ft), up to 3000m (10,000 ft)

The operating temperatures and operating altitude for back-to-front airflow models are:

- 0°C (32°F) to 45°C (113°F) at sea level
- 0°C (32°F) to 40°C (104°F) up to 1800 m (6000 ft)
- 0°C (32°F) to 35°C (95°F) above 1800 m (6000 ft), up to 3000m (10,000 ft)

Feature Licensing

For Extreme SLX-OS licensing for Extreme 8820 switches, refer to the *Extreme SLX-OS Software Licensing Guide*.

Table 5: Switch License Option

Part number	Description
8000-PRMR-LIC-P	Extreme 8000 Premier Feature License (Includes Insight Architecture).

For Extreme OS ONE licensing for Extreme 8820 switches, see the Licensing chapter in the *Extreme OS ONE User Guide* for your version of the Extreme OS ONE operating system.

Extreme 8720 Switch Features

The Extreme 8720 switch includes the following models:

8720-32C

The 8720-32C base switch includes six empty fan module slots and two empty power supply module slots. Fan modules and power supply modules must be ordered separately.

8720-32C-AC-F

The 8720-32C-AC-F switch includes two AC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is front-to-back.

8720-32C-AC-R

The 8720-32C-AC-R switch includes two AC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is back-to-front.

8720-32C-DC-F

The 7820-32C-AC-F switch includes two AC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is front-to-back.

8720-32C-DC-R

The 7820-32C-AC-R switch includes two AC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is back-to-front.

The front panel of the switch includes:

1 = 32 x 40/100Gbps QSFP+/QSFP28 Ethernet ports

2 = Serial console port (RJ-45)

3 = Status LEDs

4 = USB Type-A port for management or external USB flash

5 = RJ-45 out-of-band 10/100/1000BASE-T management Ethernet port

6 = 10/100/1000BASE-T Out-of-band management ports

There are two OOB management ports:

- MGMT2 - shared by CPU and BMC (secondary)
- MGMT1 - Direct to CPU only (primary)

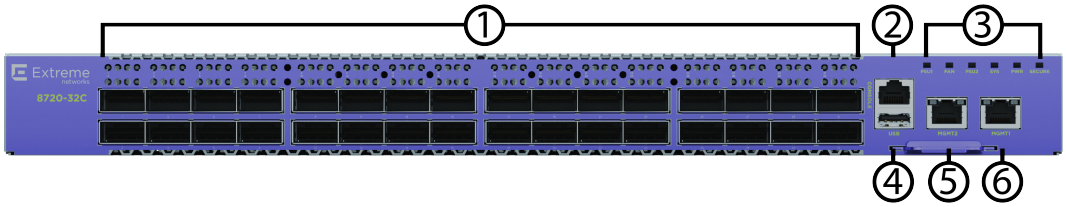


Figure 1: 8720-32C Switch Front Panel

All of the front-panel ports on the 8720-32C switch operate in either 100 gigabit or 40 gigabit mode, and each port supports multiple data lanes through the use of breakout cables. This means that a given physical port can correspond to either two or four logical ports.

In 100-gigabit mode, each port supports four 25-gigabit data lanes.

In 40-gigabit mode, each port supports four 10-gigabit data lanes.

The rear panel of the switch includes:

1 = Grounding lug

2 = 2 x Power supply slots

3 = 6 x Fan modules

Note

The color of the tab on the fan tray indicates the airflow direction:

- Red: front-to-back
- Blue: back-to-front

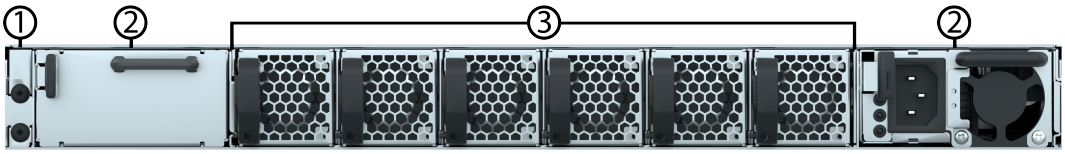
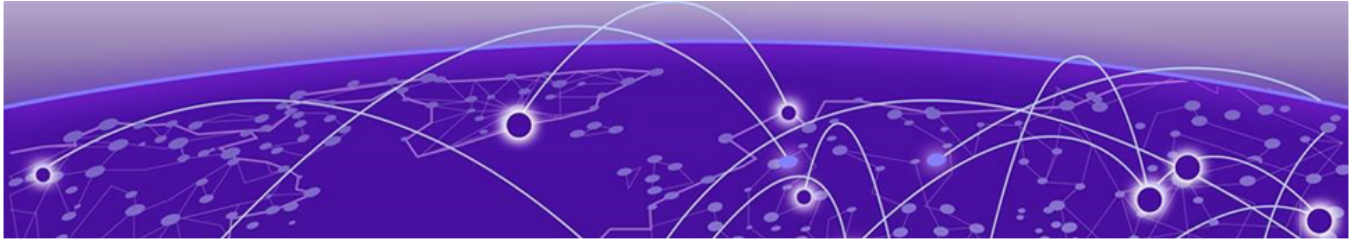


Figure 2: 8720-32C Switch Rear Panel



Manage Your Switch

Each switch can be flexibly managed though the CLI for manual configuration, or through REST or NETCONF/YANG APIs, or standard SNMP applications.

Connect to Your Switch

You can use the following methods to connect to the switch.

RJ45 serial console port

Attach an RJ45 to DB9 adapter cable to the RJ45 serial console port on the switch to connect a terminal to manage the switch locally. The RJ45 serial console port is located on the front panel of the switch.

Ethernet management port

Attach an Ethernet cable to the Ethernet management port to connect the system to an out-of-band management network to manage the switch. An Ethernet management port provides dedicated remote access to the switch using TCP/IP. The switch uses an Ethernet management port only for host operation, not for switching or routing. The switch has dual management ports. The primary port, MGMT1, is directly connected to the CPU. The secondary port, MGMT2, is connected to a switch so that the CPU and BMC can share the port.

Alternatively, attach an Ethernet cable directly to the Ethernet management port and a laptop to view and locally manage the switch configuration.

The Ethernet management ports are located on the front panel of the switch. They support 10/100/1000 Mbps speeds.

For switch connection details, see Connect to a Management Console on page 51.

Configure and Operate Your Switch

The switch supports flexible configuration and operation through the following methods.

Web-based GUI or generic command-line interface (CLI)

The command line interface (CLI) is a powerful tool for managing and configuring switches and network settings. The CLI interface can be accessed through the web-based GUI, or through Telnet, Secure Shell (SSH2), or SNMP using an SNMP manager. The web server must be enabled in the operating system on the switch in order to use the web-based GUI. For more information on Extreme OS ONE, see the *Extreme OS ONE Switching Management Configuration Guide* and the *Extreme OS ONE Switching Command Reference* for your version of the Extreme OS ONE operating system. For more information on Extreme SLX-OS, see the *Extreme*

SLX-OS Management Configuration Guide for your version of the Extreme SLX-OS operating system.

REST API

The REST API (Representational State Transfer Application Programming Interface) can be used for managing and configuring switches through a programmatic interface. It is HTTP-based and allows clients to interact with the server and operational data. It can be used for out-of-band and in-band management through an Ethernet connection. The REST API can be accessed through the RESTCONF interface after it has been enabled in the operating system. Refer to the REST API guide for the switch operating system for more information.

NETCONF Interface

NETCONF (Network Configuration Protocol) is a protocol used for managing and configuring network devices. NETCONF APIs allow for programmatic access to the switch configuration and operational data. It can be used for in-band management through an Ethernet connection. NETCONF must be enabled in the operating system on the switch and can be accessed using a NETCONF client. Refer to the NETCONF API guide for the switch operating system for more information.

Lights Out Management (LOM)

The switch contains a baseboard management controller (BMC) for lights-out management (LOM) for remote operations such as reboots, shutdowns, and out-of-band troubleshooting.

Simple Network Management Protocol (SNMP)

SNMP provides facilities to manage and monitor network resources using agents, managers, the SNMP protocol, and Management Information Bases (MIBs). SNMP must be configured on the switch and accessed through an SNMP manager. For more information on Extreme OS ONE, see the *Extreme OS ONE Switching Management Configuration Guide* and the *Extreme OS ONE Switching Command Reference* for your version of the Extreme OS ONE operating system. For more information on Extreme SLX-OS, see the *Extreme SLX-OS Management Configuration Guide* for your version of the Extreme SLX-OS operating system.

Fan Modules for Use with Your Switch

Fan Modules on page 21

The Extreme 8720 switch is designed to operate with hot-swappable internal fan modules that provide the cooling needed for the switch to operate. The switch models can include up to six redundant, hot-swappable fan modules. The fan modules in the switch chassis can be removed and replaced without special tools. The switch can continue operating while a fan is being replaced (hot-swap).

Switch fans are not responsible for cooling the power supplies; power supplies have integrated cooling fans that operate independently of the switch fan. The switch supports both front-to-back and back-to-front airflow for switch cooling. Fan module slots are located on the rear panel of the switch.

Precautions Specific to Fan Modules

Warning
Be careful not to accidently 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 fan 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.

Fan Modules

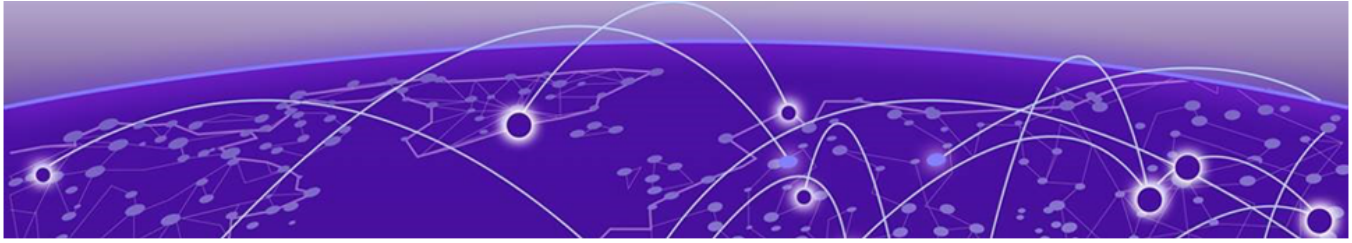
Two fan module options, with front-to-back or back-to-front airflow, are supported on the Extreme 8720 switch.

- Part number XN-FAN-001-F provides front-to-back airflow for switch cooling.
- Part number XN-FAN-001-R provides back-to-front airflow for switch cooling.

Fans are ordered separately for the base 8720-32C switch. Fans are included with other switches.

For information on installing or replacing a fan module, see Replace Fan Modules on page 65.

LEDs on the front panel of the switch provide information on the unit's operational status. See Monitor the Switch on page 54 for details.



Power Supplies for Use with Your Switch

750 W AC Power Supply on page 23
750 W DC Power Supply on page 24

The Extreme 8720 switch is designed to operate with hot-swappable internal AC or DC 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 (hot-swap).

Important
Installed power supplies can be AC or DC , but not a mix of both.

Power supplies have integrated cooling fans that operate independently of the switch fans for power supply cooling and are not responsible for cooling the switch. All installed power supplies must blow air in the same direction and must match the airflow direction of the installed fan modules. Power supply slots are located on the rear panel of the switch.

Precautions Specific to Power Supply Modules

Warning
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.

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 fan 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.

750 W AC Power Supply

Two 750 W DC power supply options, with front-to-back or back-to-front airflow, are supported on Extreme 8720.

- Part number XN-ACPWR-750W-F (750 W AC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-ACPWR-750W-R (750 W AC power supply) provides back-to- front airflow for power supply cooling.

Power supplies are ordered separately for the base 8720-32C switch. Power supplies are included with other switches.

The 750 W AC power supply has a (C14) power inlet that requires a (C13) power cord.

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 76.

For information on installing or replacing a power supply, see Replace Power Supplies on page 58.

The 750 W AC power supply has the status LEDs listed in Table 6. The LEDs are located on the end of the power supply unit, arranged vertically to the left of the power cord receptacle.

Table 6: 750 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

750 W DC Power Supply

Two 750 W DC power supply options, with front-to-back or back-to-front airflow, are supported on Extreme 8520 switches.

- Part number XN-DCPWR-750W-F (750 W DC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-DCPWR-750W-R (750 W DC power supply) provides back-to- front airflow for power supply cooling.

Note
DC power input cords are not provided with DC power supplies. You can order an appropriate cord from Extreme Networks or from your local supplier.

For information on installing or replacing a power supply, see Replace Power Supplies on page 58.

The 750 W DC power supply has the status LEDs listed in Table 7. The LEDs are located on the end of the power supply unit, arranged vertically to the left of the power cord receptacle.

Table 7: 750 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

Site Preparation

Plan Your Site on page 25
Operating Environment Requirements on page 26
Rack Specifications and Recommendations on page 29
Evaluate and Meet Cable Requirements on page 31
Meet Power Requirements on page 35
Follow Applicable Industry Standards on page 37

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 the Technical Specifications on page 67 topic.

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 on page 67.

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 listed in Table 8 are authorities on electrical codes.

Table 8: 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 Pfingsten Road Northbrook, IL 60062 USA	www.ul.com
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 of1934. 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 29 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
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 below the maximum operating temperature for the equipment.
- 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 -40°C (-40°F) and 70°C (158°F).

Table 9 summarizes the behavior of Extreme Networks switches when they experience high operating temperatures.

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

Table 9: Thermal Shutdown and Restart Behavior

Switch Model(s)	Behavior
All switches	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 by removing and then restoring all line power to the system. The internal sensor must still measure a system temperature that is lower than the maximum specified ambient temperature, so recovery might not be immediate.

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)

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

- 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 6 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, 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.

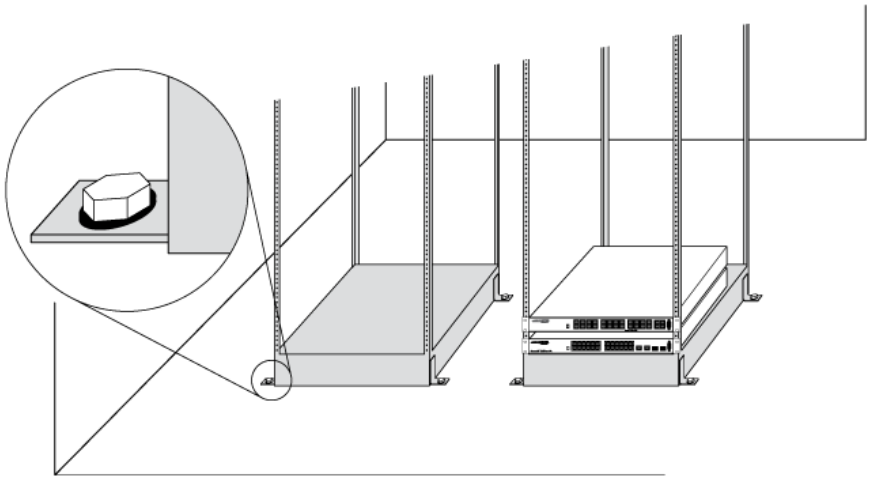


Figure 3: Properly Secured Rack

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

Evaluate and Meet Cable Requirements

Use professional consultants for site planning and cabling.

The Building Industry Consulting Service International (BICSI) Registered Communications Distribution Designer (RCDD), which is globally recognized as a standard in site planning and cabling, can be used.

For information, visit www.bicsi.org.

Label Cables and Keep Accurate Records

A reliable cable labeling system is essential when planning and installing a network.

Keeping accurate records helps you to:

- Relocate devices easily.
- Make changes quickly.
- Isolate faults in the distribution system.
- Locate the opposite end of any cable.
- Know the types of network devices that your cabling infrastructure can support.

Follow these guidelines when setting up a cable labeling system suitable for your installation:

- Identify cables by securely attaching labels to all cable ends.
- Assign a unique block of sequential numbers to the group of cables that run between each pair of wiring closets.
- Assign a unique identification number to each equipment rack.
- Identify all wiring closets by labeling the front panel of your Extreme Networks equipment and other hardware.
- Keep accurate and current cable identification records.
- Post records near each equipment rack. For each cable drop, include information about the cable source, destination, and jumper location.

Install Cable

When you connect cable to your network equipment, keep the following things in mind.

- Examine cable for cuts, bends, and nicks.
- Support cable using a cable manager that is mounted above connectors to avoid unnecessary weight on the cable bundles.
- Use cable managers to route cable bundles to the left and right of the network equipment to maximize accessibility to the connectors.
- Provide enough slack, approximately 5 to 7.5 cm (2 to 3 in), to provide proper strain relief as shown in Figure 4 on page 33.
- Bundle cable using hook-and-loop straps to avoid injuring cables.
- If you build your own cable, be sure that connectors are properly crimped.
- When installing a patch panel using twisted pair wiring, untwist no more than 2.5 cm (1 in) of the cable to avoid radio frequency (RF) interference.
- Discharge the RJ45 Ethernet cable before plugging it into a port on the switch.

Caution
Unshielded twisted pair (UTP) cable can build up electrostatic charges when being pulled into a new installation. Before connecting any category 5 UTP cable to the switch, discharge ESD from the cable by plugging the RJ45 connector into a LAN static discharge device or use an equivalent method.

- Use plenum-rated cable when it is necessary for safety and fire rating requirements. Consult your local building codes to determine when it is appropriate to use plenum-rated cable, or refer to IEC standard 850.
- Keep all ports and connectors free of dust.

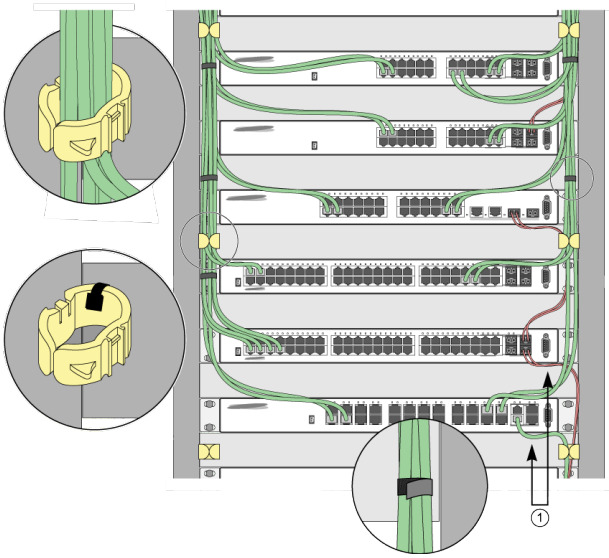


Figure 4: Properly Installed and Bundled Cable

1 = Ensure adequate slack and bend radius

Handle Fiber Optic Cable

Fiber optic cable must be handled carefully during installation.

Every cable has a minimum bend radius, and fibers will be damaged if the cables are bent too sharply. It is also important not to stretch the cable during installation. Ensure that the bend radius for fiber optic cables is equal to at least 5 cm (2 in) for each 90-degree turn as shown in Figure 5.

Note
Kinks and sharp bends can destroy or impair the cable's ability to convey light pulses accurately from one end of the cable to the other. Use care in dressing the optical fiber cables: provide satisfactory strain relief to support the cable and maintain an adequate bend radius at all cable turns, particularly where the cable connects to the I/O module.

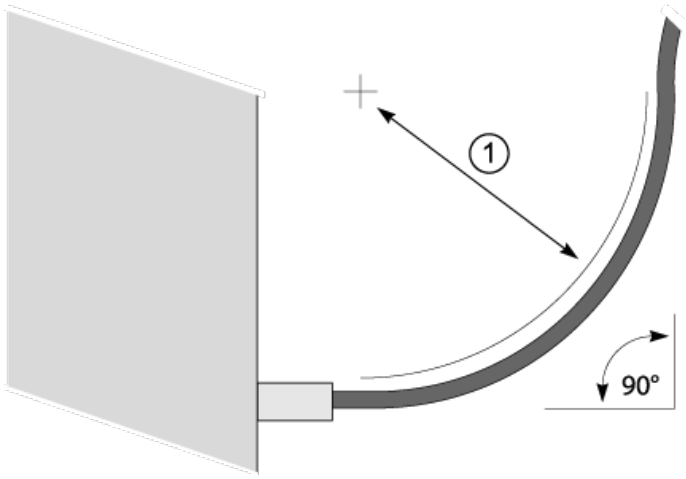


Figure 5: Bend Radius for Fiber Optic Cable
1 = Minimum 5 cm (2 in) radius in 90° bend

Cable Distances and Types

Refer to the Extreme Optics website for descriptions of optics and cables, as well as a complete list of supported cable lengths, and a list of the cable types that are compatible with your equipment.

Use RJ45 Connector Jackets

Use RJ45 cable with connector jackets that are flush with the connector or that have connectors with a no-snag feature.

Using cable with jackets that are wider than the connectors can cause:

- Connectors that are not properly aligned with the port.
- Crowded cable installation, which can cause connectors to pop out of the port.

Figure 6 shows examples of recommended and non-recommended connector jacket types.

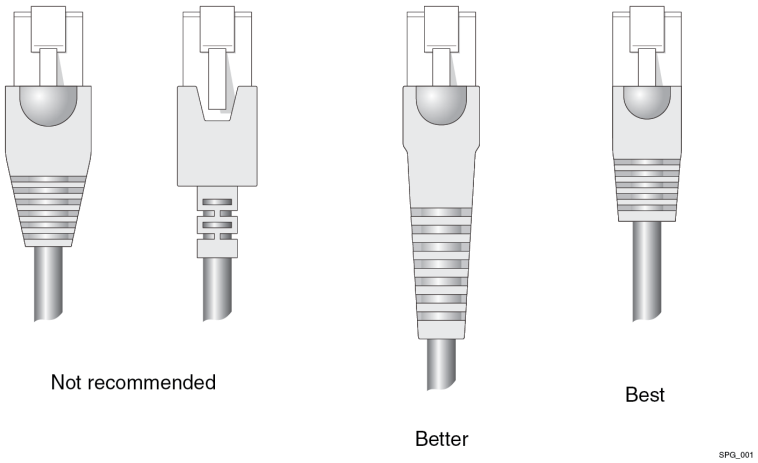


Figure 6: RJ45 Connector Jacket Types

Prevent Radio Frequency Interference (RFI)

If you use UTP cabling in an installation, take precautions to avoid radio frequency (RF) interference.

RF interference can cause degradation of signal quality, and, in an Ethernet network environment, can cause excessive collisions, loss of link status, or other physical layer problems that can lead to poor performance or loss of communication.

To prevent RF interference, avoid the following situations:

- Attaching UTP cable to AC power cables
- Routing UTP cable near antennas, such as a ham radio antenna
- Routing UTP cable near equipment that could exhibit RF interference, such as ARC welding equipment
- Routing UTP cable near electrical motors that contain coils
- Routing UTP cable near air conditioner units
- Routing UTP cable near electrical transformers

In areas or applications where these situations cannot be avoided, use fiber optic cabling or shielded twisted pair cabling.

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, the best practice is to plug your system into a surge suppressor.

For detailed power specifications for your equipment, see Technical Specifications on page 67.

Power Cord Requirements

Most Extreme Networks switches 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 37.)

Note
Use a UPS that provides online protection.

Calculate Volt-Amperage Requirements

To determine the size of UPS that you need:

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 = Volts x 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, 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, a UPS transition time of 20 milliseconds or less ensures optimum performance and minimizes service interruptions.

For high-availability and fault-tolerant installations in which the switches use redundant power supply units (PSUs), ensure that each PSU in a switch is connected to a different UPS and that each UPS is 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.)

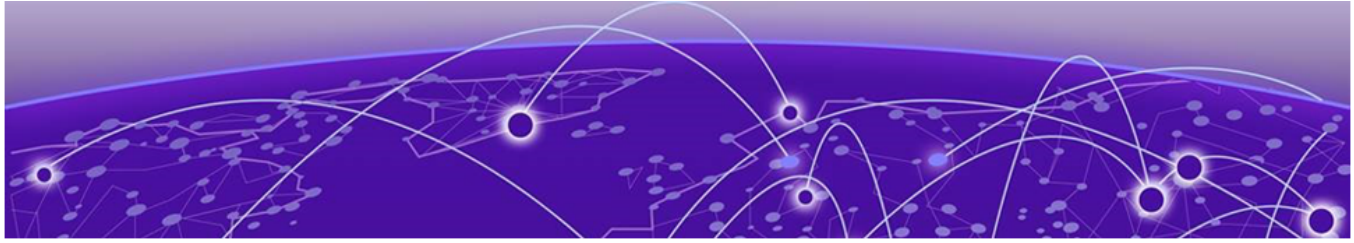
Follow Applicable Industry Standards

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: or .



Install Your Switch

Safety Considerations for Installation on page 39
What You Will Need for the Installation on page 39
Attach the Switch to a Rack or Cabinet on page 40
Install Optional Components on page 48
Install Internal Power Supplies on page 49
Connect Network Interface Cables on page 49
Turn on the Switch on page 50

Before you attempt to install or remove an Extreme Networks switch, read the precautions in Safety Considerations for Installation on page 39.

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

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

The installation process includes the following tasks:

Table 10: Switch Installation Tasks

Step	Procedure	Description
1	What You Will Need for the Installation on page 39	Prepare to install the switch
2	Attach the Switch to a Rack or Cabinet on page 40	Install the switch in the rack.
4	Install Optional Components on page 48	Install optional components: optical transceivers and cables.
5	Install Internal Power Supplies on page 49	Install one or two power supplies if your switch does not come with an installed internal power supply. **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.
6	Connect Network Interface Cables on page 49	Connect network interface cables.

Table 10: Switch Installation Tasks (continued)

Step	Procedure	Description
7	Turn on the Switch on page 50	Power up the switch.
8	Activate and Verify the Switch on page 51	Perform initial network connection and configuration.

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 power cables.
Disconnect the ground wire **after** you disconnect all 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 Information on page 79 for additional safety information. See Regulatory Information on page 86 for 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 25, 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 to see what hardware is provided in the switch packaging. MicoVSP switches do not come with rack-mounting brackets or screws.

- Two rack mounting brackets (ears) adaptable for either a front-mount or mid-mount installation.
- Two long mounting brackets (rails) or slider kits for mounting in a four-post installation.
- Screws for attaching mounting hardware to the switch housing.

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.
- AC power cord. For switches with removable AC power supplies, a separate power cord is needed for each installed power supply. The cord must meet the requirements listed in Power Cord Requirements for AC-Powered Switches and AC Power Supplies on page 76.
- ESD-preventive wrist strap for installing optional ports at the back of the switch.

Attach the Switch to a Rack or Cabinet

The switch can be attached to a standard 19-inch equipment rack, in either of the following ways:

- Four-post rack, using the mounting kit provided. The kit contains an instruction sheet, along with the following components:
  - Two mounting brackets, known as *inner members* in the instruction sheet. These pieces attach directly to both sides of the switch housing.
  - Two slider assemblies, one for each side of the switch. 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 (4 count)
- Two-post rack, using mounting brackets (not provided) to attach the front or the middle of the switch to the posts.

The part number for the four-post mounting kit provided with Extreme 8720 switches is XN-4P-RKMT298. The part number for the two-post mounting kit that is not provided, but can be ordered separately, is XN-2P-RKMT299.

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

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

Four-Post Rack Mount

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

1. On one side of the switch, locate and remove the two black screws next to the data ports on the switch. Repeat as needed for the opposite side.
2. Using the provided mounting ear screws, attach each of the mounting ears using the holes exposed in the previous step. Ensure that the mounting ears are flush with the faceplate of the switch. See Figure 7.
3. Extend the slider assembly to the fullest extent. Locate the small white release tab on the mounting bracket and push it toward the blue release tab, allowing the mounting bracket to slide the rest of the way off the slider assembly. Repeat this step for the other slider assembly.
4. Attach a mounting bracket to each side of the switch housing, using the screws provided. Ensure that the blue tab is close to the mounting ear and away from the switch. See Figure 7.

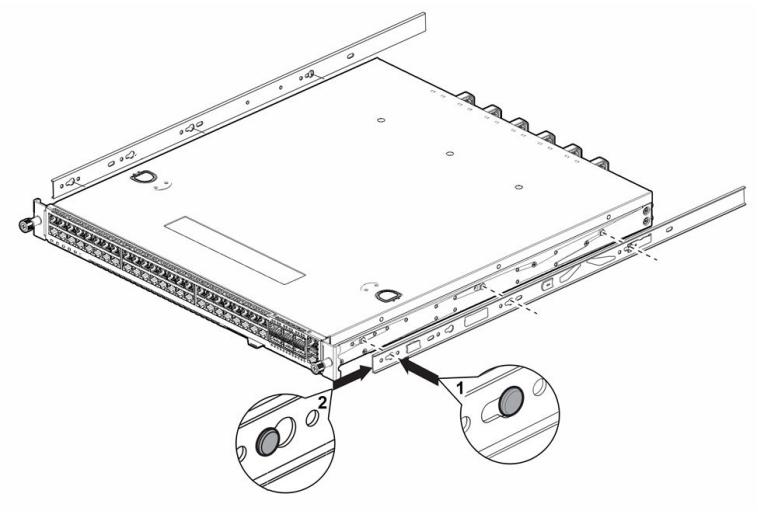


Figure 7: Attaching a Mounting Bracket to One Side of the Switch Housing

5. Repeat step 4 to attach the other mounting bracket to the other side of the housing.
6. Attach the slider assemblies to the front and rear rack posts, clicking into place at each end.

   a. Push the pegs on the front of the slider assembly through the holes in the front rack post, until they snap into place. See Figure 8.

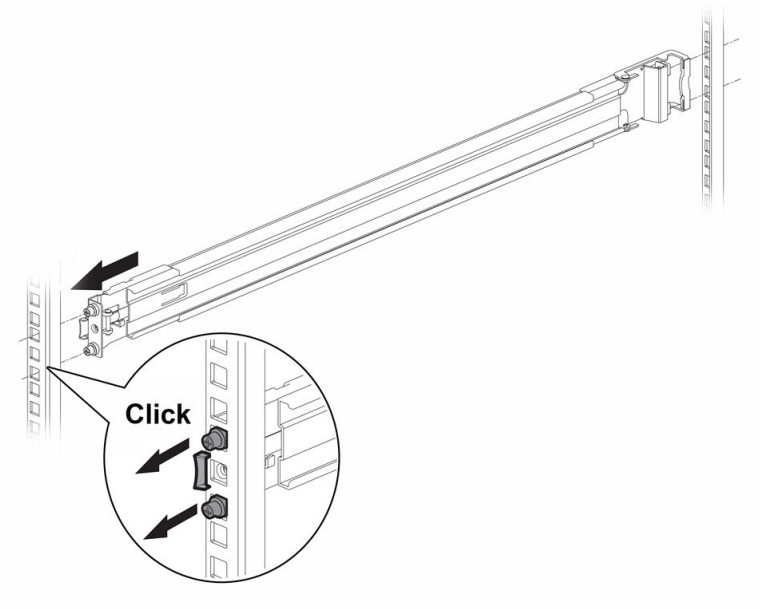


Figure 8: Attaching the Slider Assembly to the Front Rack Post

b. Extend the slider assembly until its rear clamp fits around the rear rack post.
c. Ensure that the slider assembly is level. If necessary, move it up or down at the rear of the rack.
d. Snap the rear clamp into place. See Figure 9.

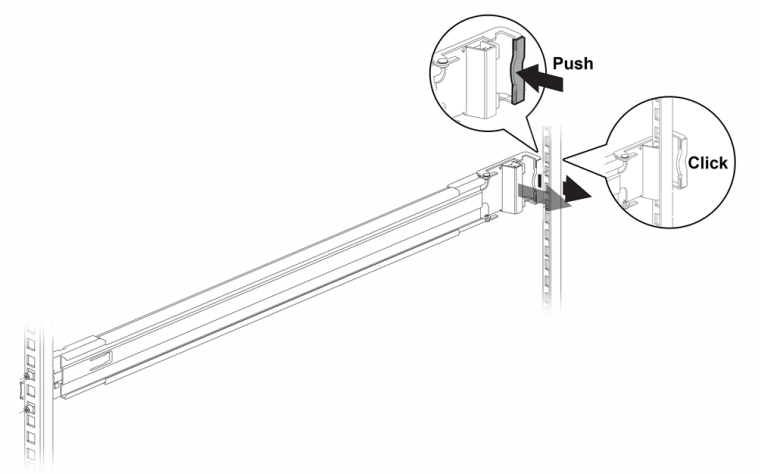


Figure 9: Attaching the Slider Assembly to the Rear Rack Post

7. Repeat step 6 to attach the other slider assembly to the front and rear rack posts on the other side.
8. Locate the intermediate rail inside each slider assembly and pull it out to its fullest extent. See Figure 10.

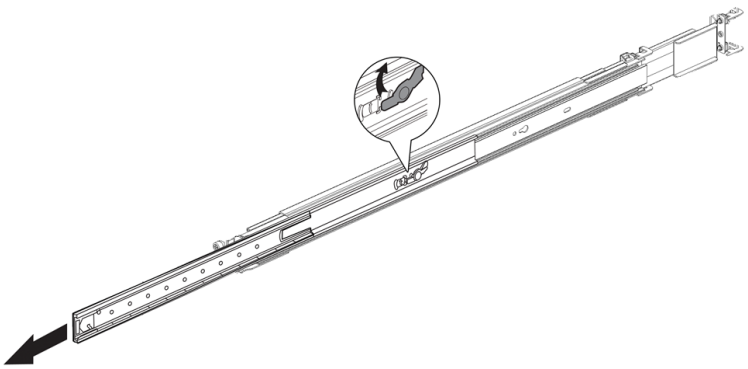


Figure 10: Extending the Slider Assembly to Fit the Rack

It remains attached to the slider assembly.

9. Screw the mounting ear thumbscrews into the rack rails to hand tightness
10. Lift the switch into position and insert the mounting brackets into the slider assemblies on both sides.
11. Push the switch in gently until both mounting brackets engage with the sliding rails. See Figure 11.

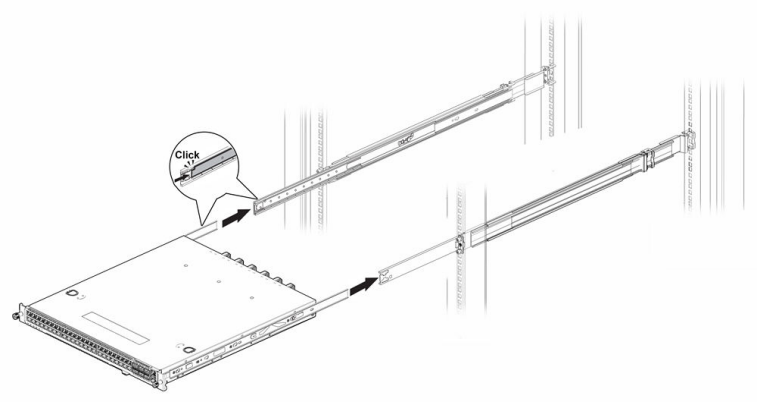


Figure 11: Engaging the Mounting Brackets with the Rail Assemblies

12. Release the tabs on both slider assemblies, and carefully push the switch back until it is firmly in place. See Figure 12.

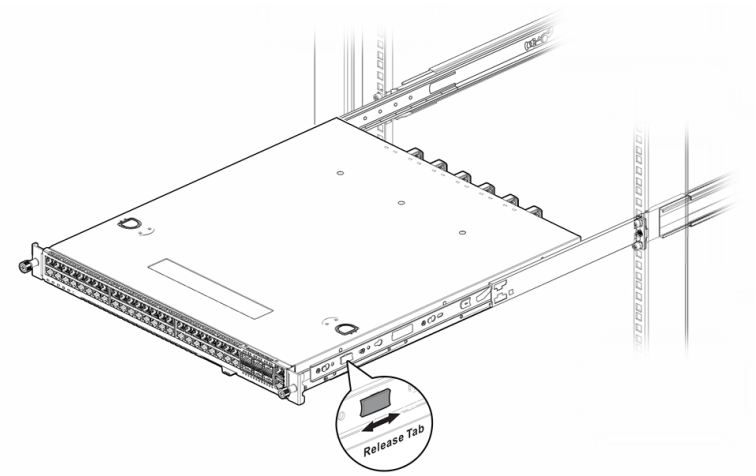


Figure 12: Pushing the Mounting Brackets into the Rail Assemblies

13. Screw the mounting ear thumbscrews into the rack rails to hand tightness. The completed assembly is shown in Figure 13.

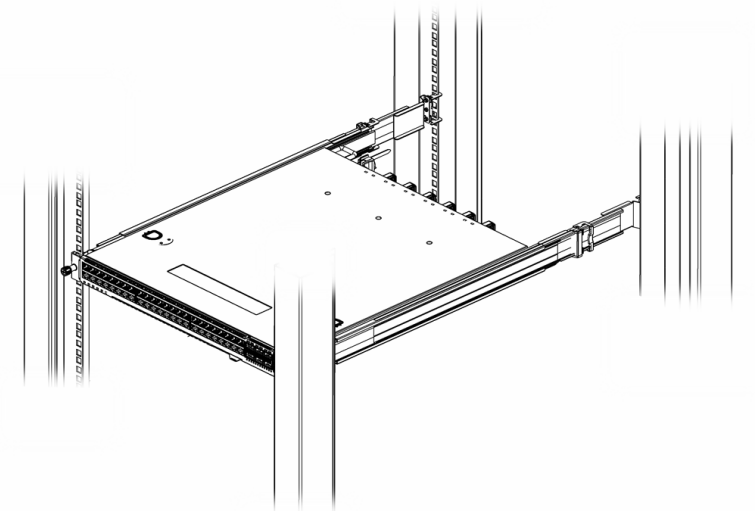


Figure 13: Completed Installation: Switch in 4-Post Rack

14. Verify that the switch is leveled and is firmly attached to the rack.

Two-Post Rack Mount

The side of the switch has different sets of holes for attaching mounting brackets in either configuration.

Mounting brackets for a two-post mount are not included in the box with the switch. However, they can be ordered separately using part number XN-2P-RKMT299.

Use the following instructions to install the switch in a two-post rack.

1. Set a mounting bracket against the switch housing on one side of the switch.

Set the flange (ear) flush with the front of the switch, facing the front, for a flush-mount.

Set the flange (ear) slightly more than halfway between the front and back of the switch, for a mid-mount.

The following figures illustrate how to attach the brackets for two common mounting options.

- Figure 14 shows a flush-mount configuration using a short mounting bracket.
- Figure 15 shows a mid-mount configuration using a short mounting bracket.

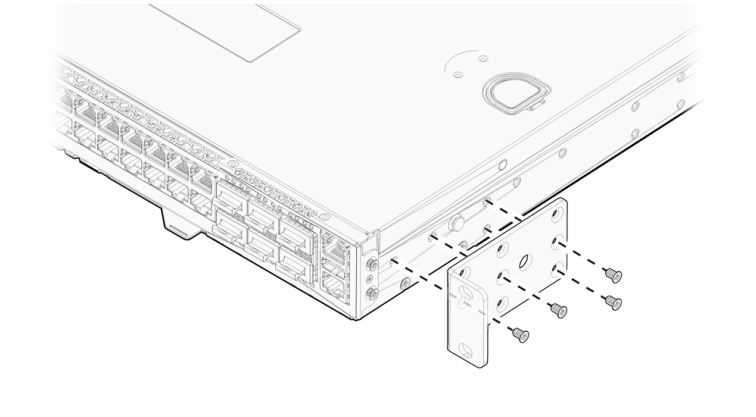


Figure 14: Flush-Mount: Attaching Short Mounting Brackets

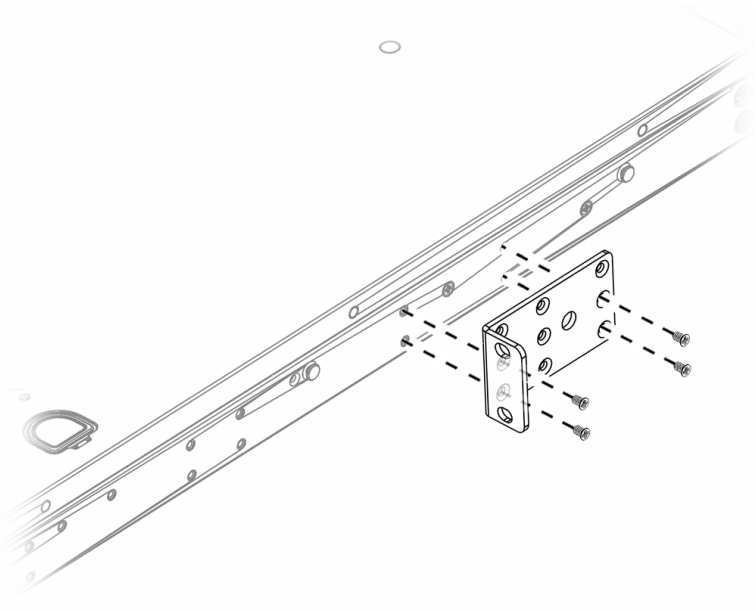


Figure 15: Mid-Mount: Attaching Short Mounting Brackets

2. Use the small bracket-mounting screws (provided) to secure the bracket to the switch housing.

If you are using screws other than the screws that are provided, ensure that the threaded length of the screws is within 4 to 5 cm.

3. Repeat step 1 and step 2 to to attach the other bracket to the other side of the switch.
4. Attach a long mounting bracket to one side of the switch housing and to the rack post.

   a. Position the long bracket over the holes between the front and the middle of the switch. Orient it so that its flange (ear) rests against the rack post. See Figure 37 and Figure 38.

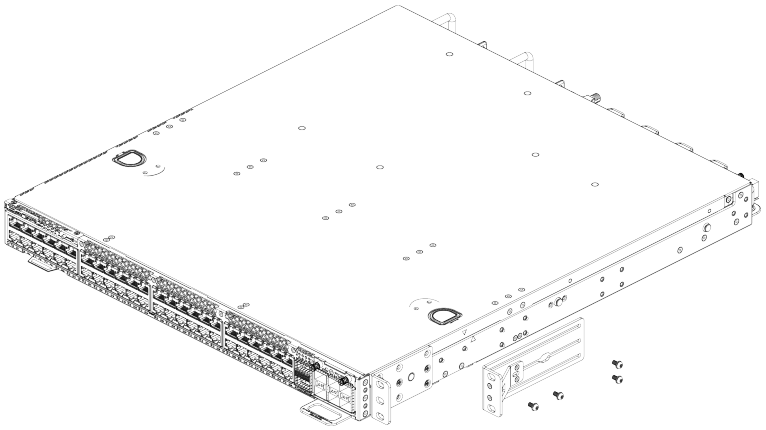


Figure 16: Attaching a Long Mounting Bracket: Front of Switch

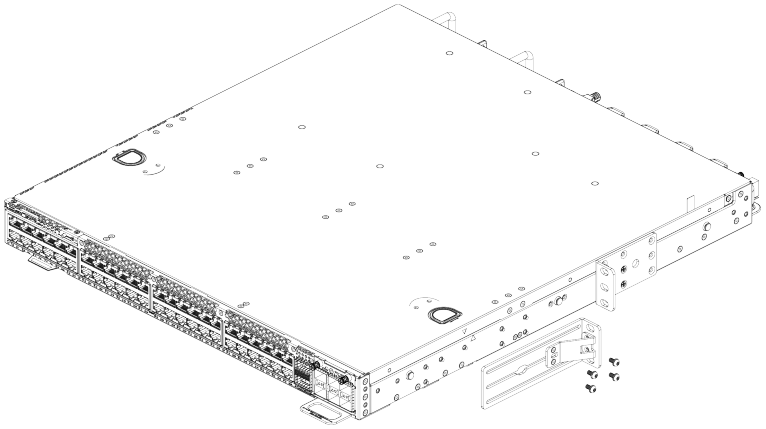


Figure 17: Attaching a Long Mounting Bracket: Middle of Switch

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

   If the switch cannot be tilted (because other equipment is mounted directly above and below), remove one or both short mounting brackets from the switch. Lift the

switch into position, secure the flanges (ears) on the long brackets to the rack posts, and then reattach the short brackets.

7. Secure the mounting bracket flanges to the rack, using screws that are appropriate for the rack. (Rack-mounting screws are not provided.)

   See Figure 18 and Figure 19 for the completed installations.

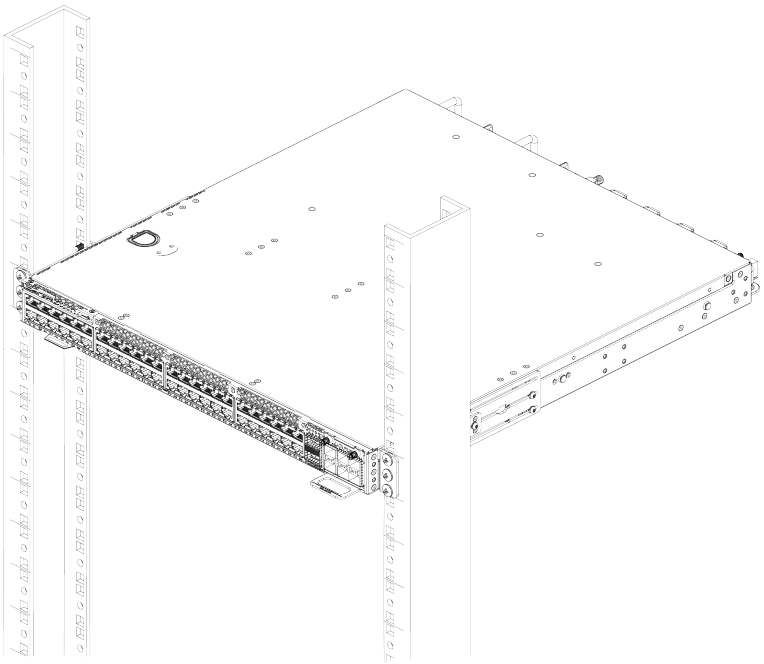


Figure 18: Two-Post Front Mount: Complete

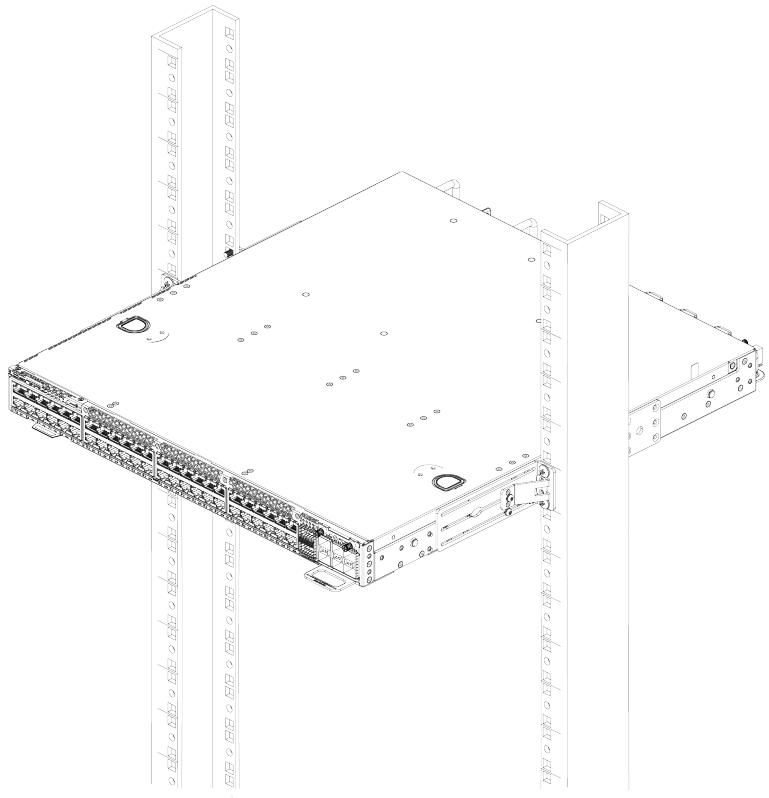


Figure 19: Two-Post Mid-Mount: Complete

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

After the switch is secured to the rack or cabinet, install optional components using the instructions in Install Optional Components on page 48.

If the switch comes with installed power supplies, continue to Install Optional Components on page 48.

If the switch does not have an installed power supply, install one or two power supplies using the instructions in Install Internal Power Supplies on page 49.

Install Optional Components

Extreme Networks switches support the use of pluggable transceivers and cables in the SFP, SFP+, SFP28, QSFP-DD, QSFP+, and QSFP28 formats.

For a list of the optical components supported with Extreme Networks 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.

Optical Cables

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

Install Internal Power Supplies

If your switch does not come with an installed power supply, you can install one or two power supplies. All installed power supplies must blow air in the same direction and must match the airflow direction of the installed fan modules.

Important
Installed power supplies can be AC or DC , but not a mix of both.

- Power supplies with a **red** tab provide front-to-back airflow.
- Power supplies with a **blue** tab provide back-to-front airflow.

For installation instructions, see Replace Power Supplies on page 58.

Connect Network Interface Cables

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:

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.

Turn on the Switch

Use the following instructions to turn on the switch

Note
The switch does not have a power button, so connecting the power cable at both ends turns the switch on.

Connect AC Power

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 76.

To turn on the switch, connect one end of the power cord to the AC power input socket on the device and connect the other end to an AC power outlet.

Note
The grounding connection in the power receptacle and in the power cord properly ground the power supply and extend that grounding to the switch.

If the power supply LEDs do not turn green, refer to Table 6 on page 23 for troubleshooting information.

When the power supply LED has turned green, follow the instructions in Activate and Verify the Switch on page 51.

Connect DC Power

Use the following instructions to connect the device to a DC power source.

1. Verify that the DC circuit is de-energized.
2. Verify that the ground wire is connected to the grounding lug on the rear of the switch.

   The grounding lug is identified by the international symbol for earth ground: 
3. Verify that the DC power input cables are properly connected to the DC power supplies at the rear of the switch.
4. Energize the circuit.

If the power supply LEDs do not turn green, refer to 750 W DC Power Supply on page 24 for troubleshooting information.

When the power supply LED has turned green, follow the instructions in Activate and Verify the Switch on page 51.

Activate and Verify the Switch

Connect to a Management Console on page 51
Login for the First Time on Extreme OS ONE on page 52
Login for the First Time on Extreme SLX-OS on page 52

After you have installed your Extreme Networks switch in the rack, installed all required and and optional components, connected network cables, and powered the switch on, use the instructions in the following topics to configure the software on the switch and prepare it for use.

Connect to a Management Console

The *management console* is a PC or terminal terminal-emulation software that is connected to the serial console port on the switch (an RJ45 jack) by a serial or console cable. The management console is used to monitor and configure the switch locally, using terminal emulator software such as HyperTerminal on a PC, or TERM, Tip, or Kermit in a LINUX environment.

Use the following instructions to connect the switch to a management console.

1. Verify that the switch 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 to the management Ethernet port of the switch.
3. Disable any serial communication programs running on the workstation (such as synchronization programs).
4. Open the terminal emulator software and configure the application with the following default communication protocol settings for the serial console interface.
   - In a Windows environment:

     Baud rate: 115200

     Data bits: 8

     Stop bit: 1

     Parity: None

     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
```

Login for the First Time on Extreme OS ONE

The Extreme 8720 can run Extreme Networks Extreme OS ONE operating system. Extreme OS ONE can be installed using ONIE (Open Network Install Environment), which acts as a bootloader and a lightweight Linux-based provisioning framework that allows vendors and users to install a network operating system over the network or from local media. ONIE, as a Linux-based provisioning framework, relies on Grub at login.

After connecting a management console to the switch, a login prompt displays. The default user ID is `admin` and the default password is `rocks`. You are required to change the default admin password and the Grub `root` user password at the same time. A best practice is to keep the password as `Rocks@123`, but you can choose your own password. To use the same password for the Extreme OS ONE admin user and the Grub `root` user, press **Enter**. For example:

```
Device: login: admin
Password:


*** Please change password for admin account and Grub bootloader now. ***
Use Control-C to exit or press 'Enter' key to proceed.

Changing default password for "admin" and Grub
Current admin password:
Enter new admin password:
Re-type new admin password:
Enter new password for Grub 'root' user login (Press Enter to use admin password for
Grub) : ONE OS 'admin' and Grub 'root' user passwords updated successfully
device#
```

Reboot the device by using the CLI or by powering off the device.

Login for the First Time on Extreme SLX-OS

The Extreme 8720 switch can run the Extreme SLX-OS operating system. Use the following information to login to Extreme SLX-OS for the first and complete the initial configuration tasks 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**.

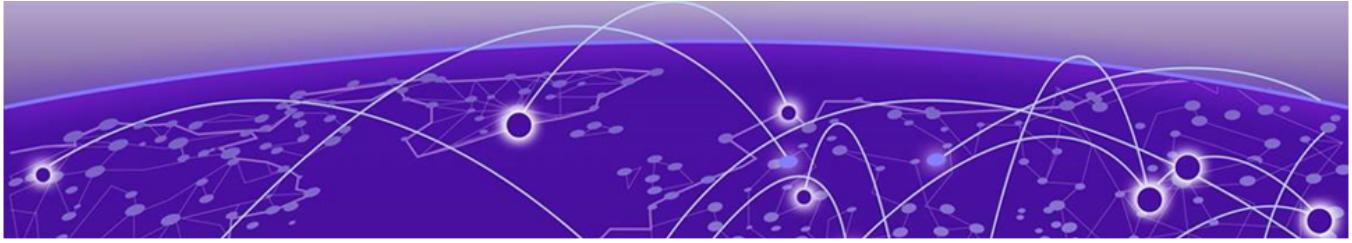
```
Warning:  Access to  the Root  and Factory accounts may be
required  for proper  support  of  the switch.  Please  ensure  the Root
and Factory passwords are  documented in a secure location.  Recovery of
a lost Root or Factory password will result in fabric downtime.

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 Switch

System Status LEDs on page 54
8720-32C Data Port (1-32) LEDs on page 55

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

System Status LEDs

Label or Type	Color/State	Meaning
PSU1, PSU2 (Power Supplies)	Solid green	PSU is installed and providing power
	Solid amber	PSU is installed but input power is disconnected or unit fault detected
	Off	PSU is not installed
FAN	Solid green	All fans operating normally
	Solid amber	A fan has been removed or fault detected
	Off	No power to fan modules
SYS (System)	Solid green	System loaded properly and is ready
	Solid amber	Either the PSU or fan or both are faulty, not present, or the system has not loaded properly
	Off	CPU power is off
PWR (Power)	Solid green	Normal operation
	Blinking green	System in reset
	Off	Unit not operational

Label or Type	Color/State	Meaning
SECURE	Solid blue	Authentication complete
	Very slow blinking blue (0.25Hz)	Bypass authentication (debug only)
	Fast blinking blue (4Hz)	Authentication failed
	Slow blinking blue (1Hz)	Authenticating or updating images
	Off	Authentication begin or fault

8720-32C Data Port (1-32) LEDs

Label or Type	Color/State	Meaning
100 Gb or 4x25 Gb	Solid green	Port OK
	Blinking green	Port transmitting or receiving
	Slow blinking green	Port disabled by software
	Off	No link/Fault
40 Gb or 4x10 Gb	Solid green	Port OK
	Blinking green	Port transmitting or receiving
	Slow blinking green	Port disabled by software
	Off	No link/Fault

Remove and Replace Components

Remove a Switch from a Rack on page 56
Replace Power Supplies on page 58
Replace Fan Modules on page 65

Use the information in the following topics to remove or replace components.

Remove a Switch from a Rack

These procedures assume that you have attached the device to the rack as described in Attach the Switch to a Rack or Cabinet on page 40.

Remove a Switch from a Four-Post Rack

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. Pull the device out of the rack until the slider rails are fully extended, while carefully supporting the weight of the device.
   b. Push the disconnect latch to release the device after it is fully extended.

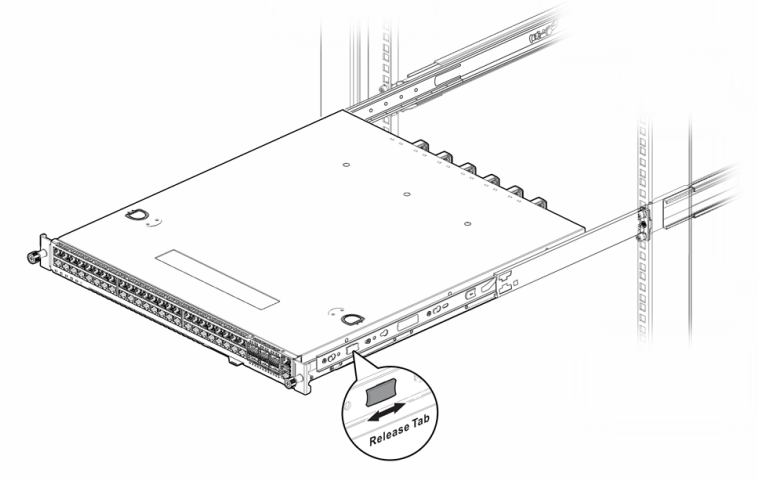


Figure 20: Disconnect latch for removal

   c. Disengage the retainers that are connecting the mounting brackets with the sliding rails on both sides.

d. 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.

e. On one of the slider assemblies, push the rear clamp until it separates from the rear rack post.

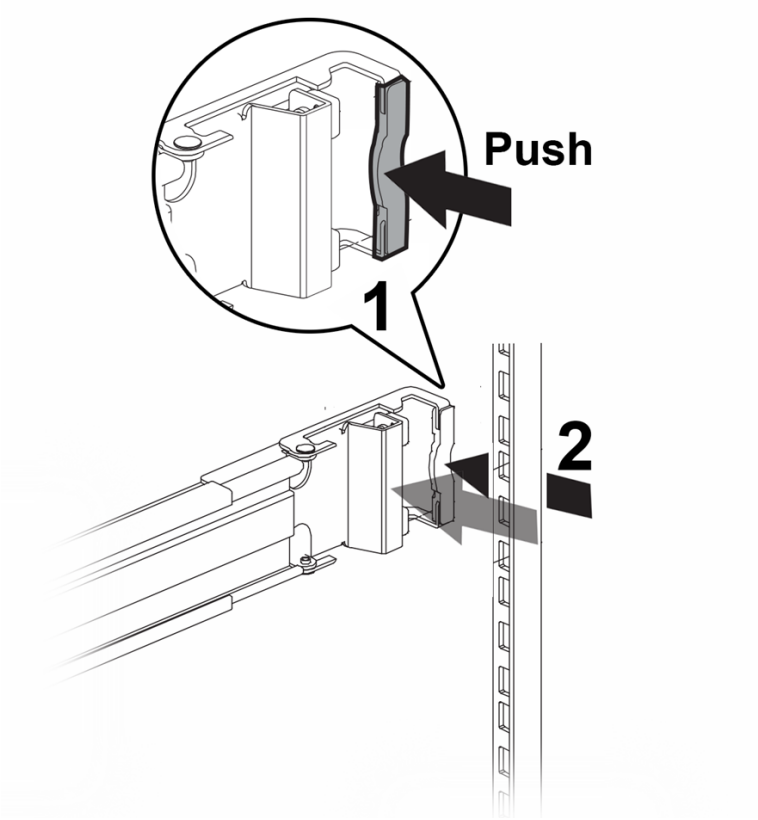


Figure 21: Removing the Slider Assembly: Rear Rack Post

f. Release the tab that holds the front of the slider assembly to the front rack post, and pull the pegs out.

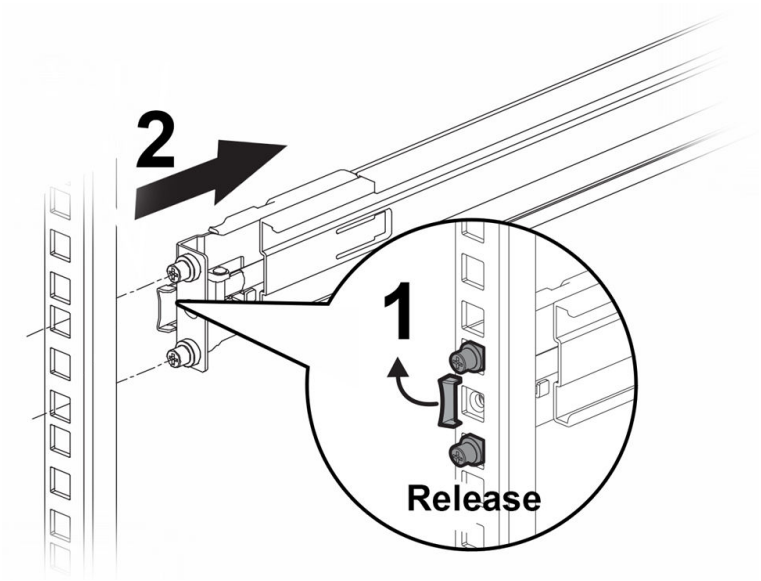


Figure 22: Removing the Slider Assembly: Front Rack Post

g. Repeat step 3.e on page 57 and step 3.f to remove the second slider assembly

Remove a Switch from a Two-Post Rack

Use the following instructions to remove a switch from a two-post rack.

1. Disconnect the device from its power source or sources, then disconnect the ground, if there is a ground.
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.

If you plan to use the device again later, store it with the mounting brackets attached.

Replace Power Supplies

For switches with replaceable power supplies, refer to the following information to replace the power supplies. The switches have two power supply slots. Installed power supplies can be AC or DC , but not a mix of both. In a switch with a redundant power configuration, you can replace one power supply without powering down the switch ("hot swapping"). Power supply slots are located on the rear panel of the switch.

Images in this topic might show switches that are not identical to the ones you are using. However, the procedure for replacing a power supply is the same for all Extreme Networks switches.

Note
Read all of the information in this chapter thoroughly before attempting to replace a power supply.

Power Supply Airflow Direction Requirements

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

- A power supply with a **red** tab provides front-to-back airflow for power supply cooling. The power supply is labeled **Air Out**.
- A power supply with a **blue** tab provides back-to-front airflow for power supply cooling. The power supply is labeled **Air In**.

Note
The operating-system software displays the airflow direction.

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 slot.

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.

Replace a Power Supply

Extreme 8720 switches support the following power supplies:

- Part number XN-ACPWR-750W-F (750 W AC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-ACPWR-750W-R (750 W AC power supply) provides back-to- front airflow for power supply cooling.
- Part number XN-DCPWR-750W-F (750 W DC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-DCPWR-750W-R (750 W DC power supply) provides back-to- front airflow for power supply cooling.

Use the following instructions to remove and replace a power supply.

Remove a Power Supply

Caution
Disconnect the AC power cord from the wall outlet and from the power supply before removing an AC power supply. Ensure that the DC circuit is de-energized before removing a DC power supply.

Use the following instructions to remove a power supply.

1. Attach an ESD-preventive wrist strap to your bare wrist and connect the metal end to an appropriate ground point on the rack.

   Caution
   Power supplies can become very hot during operation. Wear thermal protective gloves when you remove a power supply from an operating switch.

2. Note the orientation and the airflow direction of the installed power supply, and the location of the latching tab on the power supply.
3. Push the latching tab toward the power supply handle and pull outward on the handle to disengage the power supply internal connectors.

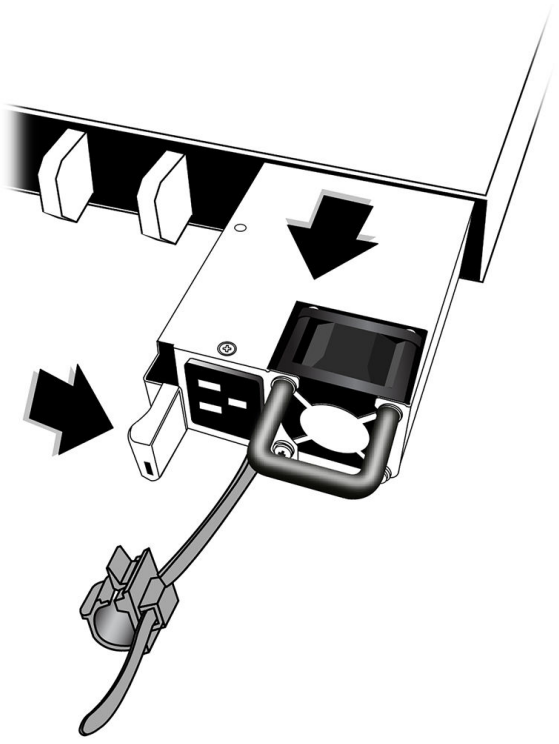


Figure 23: Remove a Power Supply

Note
If you are not installing a replacement power supply, install a cover over the unoccupied power supply bay. Unoccupied bays must always be covered to maintain proper system ventilation and EMI levels.

Replace or Install a Power Supply

Use the following instructions to replace or install a power supply.

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. If necessary, remove a blank panel from the back of the switch.
3. Ensure that the orientation of the power supply is correct, and that the new power supply's airflow direction (front-to-back or back-to-front) is compatible with the installed fan modules and any other installed power supplies.
4. Carefully slide the power supply all the way into the power supply slot.

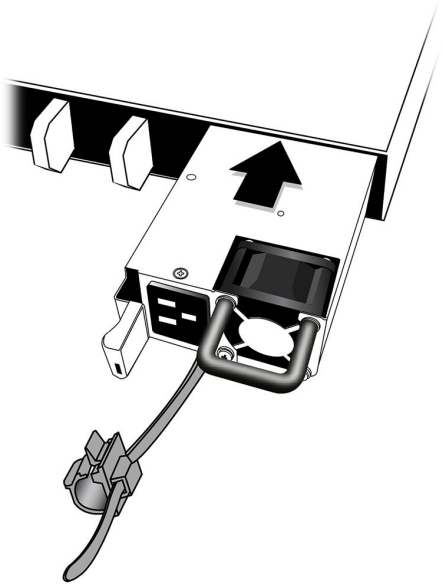


Figure 24: Install a Power Supply

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

   Do not slam the power supply into the switch.

Note
Be sure to install a cover over any unoccupied power supply slots. Unoccupied power supply slots must always be covered to maintain proper system ventilation and EMI levels.

To install or replace a second power supply repeat this procedure.

- After installing an AC power supply, connect the power cord to the power supply and to a grounded 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.

If the power supply is equipped with a power cord retainer, use the retainer to secure the power cord to the power supply.

Connect an AC Power Supply to an AC Power Outlet Using the Retainer

1. Connect the AC power cord.
   a. If necessary, slide the plastic cord retainer farther away from the back of the switch.
   b. Connect the AC power cord to the input connector.
   c. Open the clip and slip it over the barrel of the connector.

      The diagram below - Power Supply with Power Cord and Retainer Attached shows the power supply with the power cord and retainer in place.

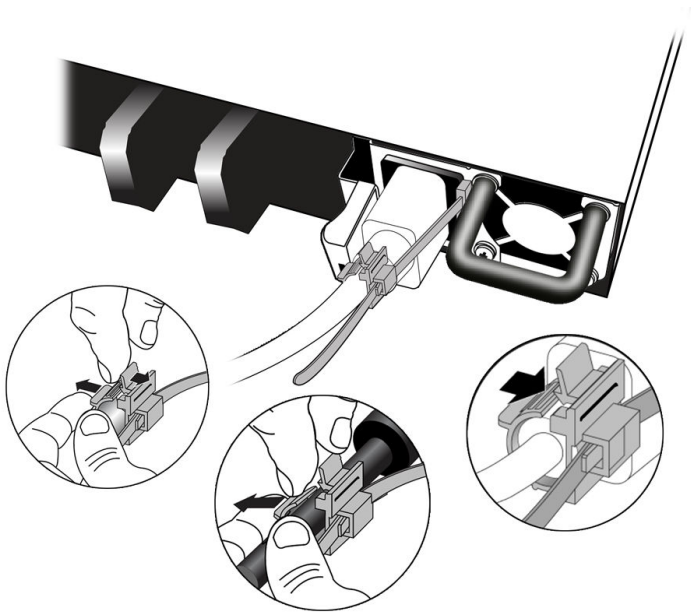


Figure 25: Power Supply with Power Cord and Retainer Attached

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

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

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

- After installing a DC power supply, ground the power supply and connect the power supply to the power source.

Warning
Connect the chassis ground wire before you connect any power cables.

Connect a DC Power Supply to a DC Power Source

After installing the DC power supply, connect it to the DC power source with either cable wires or a power supply cable.

Required Tools and Materials for Installing a DC Power Supply

You need the following tools and materials to connect a DC power supply to the source voltage.

- #6 AWG copper cable for grounding the power supply and connecting the power supply to the DC power source. (red and black grounding cables are included with the power supply):
  - Red for the -48 V connection (-)
  - Black for the -48 V RTN connection (+)
  - Green or green with yellow stripe for the ground connection
- 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 DC Power Supply

You need two cable wires for each installed DC power supply: one DC power input cable, which is provided, and a grounding cable. As a best practice, each cable has differently colored insulation, as described in Required Tools and Materials for Installing a 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.

Connect the Ground Wire to a DC Power Supply

Follow these steps to connect the ground wire to a 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.

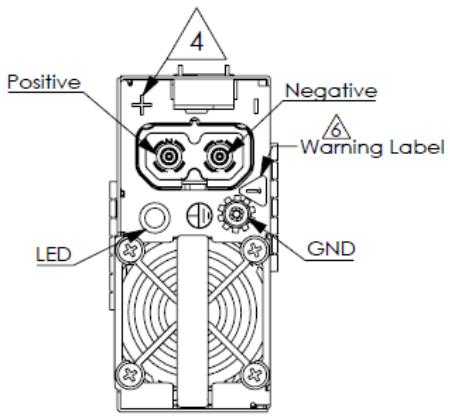


Figure 26: Front view of the DC power supply

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

   a. Attach 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.

Connect a DC Power Supply to the Source Voltage

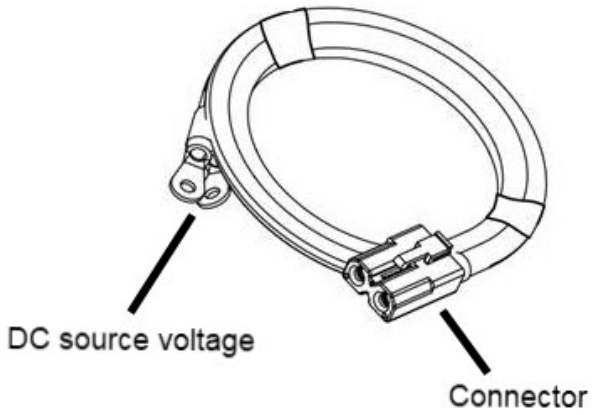
Warning
Always make sure that the DC circuit is de-energized before connecting or disconnecting the DC power cables on the DC power supply.

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

The DC power connection at your facility must be made by a qualified electrician.

Use these instructions to connect a power supply cable to the DC power supply:

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. See Turn on the Switch on page 50 for more information.

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

Replace Fan Modules

For switches with replaceable fan modules, refer to the following information to replace the fan modules. You can replace fan modules as needed while the switch is operating ("hot swapping"). Fan module slots are located on the rear panel of the switch.

Do not operate a chassis for more than a few minutes with a missing fan module. To ensure internal chassis air pressure is maintained and to avoid loss of traffic due to modules overheating and shutting down, leave a failed fan module installed until you have a replacement.

Images in this topic might show switches that are not identical to the ones you are using. However, the procedure for replacing a fan module is the same for all Extreme Networks switches.

Note
Read all of the information in this chapter thoroughly before attempting to replace a fan module.

Fan Airflow Direction Requirements

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

- Fan modules with a **red** tab provide front-to-back airflow and are labeled **Air Out**.

- Fan modules with a **blue** tab provide back-to-front airflow and are labeled **Air In**.

Note
The operating-system software displays the airflow direction.

Replace a Fan Module

Extreme 8720 switches support the following fan modules:

- Part number XN-FAN-001-F provides front-to-back airflow for switch cooling.
- Part number XN-FAN-001-R provides back-to-front airflow for switch cooling.

Use the following instructions to remove and replace a fan module in the switch.

Remove a Fan Module

Use the following instructions to remove a fan module.

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 disengage and the fan stops.
2. Slide the fan module out of the switch and set it aside.

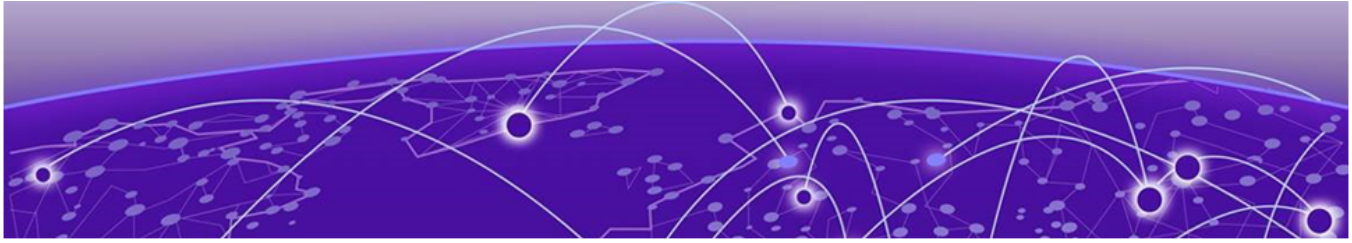
Install a Fan Module

Use the following instructions to install a fan module.

1. Verify that the airflow direction on the replacement fan module matches that of the installed power supplies and any fan modules.
2. 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 automatically starts to operate.



Technical Specifications

Extreme 8720 Technical Specifications on page 67
Acoustic Noise and Fan Speed on page 69
Mean Time Between Failures (MBTF) on page 70
Power Specifications on page 70
750 W Power Supplies Technical Specifications on page 71
Environmental on page 73
Standards on page 74
EMI/EMC Standards on page 74
Power Cord Requirements for AC-Powered Switches and AC Power Supplies on page 76
Console Connector Pinouts on page 76

The following topics contain technical specifications for the hardware products described in this document.

Extreme 8720 Technical Specifications

Table 11 contains external interfaces and weights and dimensions information for Extreme 8720 switches.

Table 11: External Interfaces

8720 (32 x 100 GbE)	
Ports	32 x QSFP+/QSFP28 40GbE/100GbE ports 128 x 25/10 GbE using break-out cables 1 x Serial console port RJ-45 2 x 10/100/1000BASE-T out-of-band management port Micro-USB Type A storage port
Power Supplies	Modular 750W AC power supply (up to 2 PSUs) Modular 750W DC power supply (up to 2 PSUs) Front-Back and Back-Front airflow options
Fan Tray	6 fan modules, support one fan redundancy Front-Back and Back-Front airflow options
Dimensions	17.3 in W/22.4 in D/1.7 in H (44 cm/57.0 cm/4.3cm)
Weight	16.3 lb (7.4 kg) with no PSU / 19.9 lb (9.0 kg) with two PSUs

Table 11: External Interfaces (continued)

8720 (32 x 100 GbE)	
Performance	Line rate 6.4 Tbps Switching Capacity (3.2 Tbps ingress, 3.2 Tbps egress) Forwarding Rate: 2000 Mpps Typical Latency: 800 ns
CPU/Memory	8 Core Processor 16 GB DDR4 memory 128 GB SSD memory
Packet Buffers	32MB
Operating Conditions	Operating Temperature – Front-to-back: 0°C (32°F) to 50°C (122°F) at sea level 0°C (32°F) to 45°C (113°F) up to 1800 m (6000 ft) 0°C (32°F) to 40°C (104°F) up to 1800 m (6000 ft), up to 3000 m (10000 ft) Operating Temperature – Back-to-front: 0°C (32°F) to 45°C (113°F) at sea level 0°C (32°F) to 40°C (104°F) up to 1800 m (6000 ft) 0°C (32°F) to 35°C (95°F) up to 1800 m (6000 ft), up to 3000 m (10000 ft)

Weights and Dimensions of Accessories

Accessory	Weight	Physical Dimensions
Fan unit, front-to-back or back-to-front	0.14 kg (0.31 lb)	Height: 4.0 cm (1.57 in) Width: 4.0 cm (1.57 in) Length: 13.4 cm (5.28 in)
Four-post rack mount kit (included with switch)	2.63 kg (5.8 lb)	Height: 2.1 cm (0.83 in) Width: 4.4 cm (1.73 in) Length: 63.0 cm - 90.0 cm (24.80 in - 35.43 in)
Two-post rack mount kit (separately orderable)	0.45 kg (0.99 lb)	Height: 5.0 cm (1.97 in) Width: 7.0 cm (2.76 in) Length: 72.0 cm (28.4 in)

Console Cables

	Description
XN-RJ45-DB9-CONSOLE-CBL	RJ45 to DB9 Console cable (6ft)
XN-RJ45-USBA-CONSOLE-CBL	RJ45 to USBA Console cable (6ft)*
XN-RJ45-USBC-CONSOLE-CBL	RJ45 to USBC Console cable (6ft)*

* The cable might require an FTDI software driver on some operating systems.

Acoustic Noise and Fan Speed

Table 12 includes acoustic specifications for Extreme 8720 switches under maximum operating conditions.

Table 12: Acoustic Noise

Switch Model	Bystander Sound Pressure (at 25°C)	Declared Sound Power (at 25°C)
8720-32C-AC-F (Front-to-Back Airflow)	45 dB(A)	6.9 bels
8720-32C-AC-R (Back-to-Front Airflow)	52 dB(A)	7.3 bels
8720-32C-DC-F (Front-to-Back Airflow)	45 dB(A)	6.9 bels
8720-32C-DC-R (Back-to-Front Airflow)	52 dB(A)	7.3 bels

Fan speeds are adjusted based on calculations of the temperatures on all sensors. Due to one fan being located behind the other, air pushed from one fan can cause the other fan in the module to run at a higher speed. One fan can run at medium speed while the other can spin at high speed if one is close to the temperature boundary.

Table 13: Fan Tray and Speed Variation

Description	Operation Status	Operation Speed	Airflow Direction
Tray 1 Fan 1	up	high speed	Unknown*
Tray 1 Fan 2	up	medium speed	Unknown*
Tray 2 Fan 1	up	high speed	Unknown*
Tray 2 Fan 2	up	medium speed	Unknown*
Tray 3 Fan 1	up	high speed	Unknown*
Tray 3 Fan 2	up	medium speed	Unknown*
Tray 4 Fan 1	up	high speed	Unknown*
Tray 4 Fan 2	up	medium speed	Unknown*
Tray 5 Fan 1	up	high speed	Unknown*
Tray 5 Fan 2	up	medium speed	Unknown*
Tray 6 Fan 1	up	high speed	Unknown*
Tray 6 Fan 2	up	medium speed	Unknown*

* - The color of the tab on the fan tray indicates the airflow direction:

- Red = Front-to-Back
- Blue = Back-to-Front

Mean Time Between Failures (MBTF)

Table 14 includes mean time between failures (MTBF) information for Extreme 8720 switches.

Table 14: Mean Time Between Failures

Switch Model	Mean Time Between Failures
8720-32C-AC-F	428,807 hrs @ 25°C
8720-32C-AC-R	476,814 hrs @ 25°C
8720-32C-DC-F	476,813 hrs @ 25°C
8720-32C-DC-R	476,813 hrs @ 25°C

Power Specifications

This topic describes power supply specifications and power and heat dissipation. Refer to the *Extreme 8720 Data Sheet* for up-to-date information.

Power Supply Specifications

Table 15 includes power supply specifications for Extreme 8720 switches.

Table 15: Power Supply Specifications

	750W AC PSU XN-ACPWR-750W-F/R	750W DC PSU XN-DCPWR-750W-F/R
Dimensions	3.15 in W x 1.57 in H x 8.11 in D (8.0 cm x 4.0 cm x 20 .6 cm)	3.15 in W x 1.57 in H x 8.11 in D (8.0 cm x 4.0 cm x 20 .6 cm)
Weight	1.79 lb (0 .81 kg)	1.85 lb (0.85 kg)
Voltage Input Range	100-140 VAC / 200 -240 VAC	-48 to -60 VDC
Line Frequency Range	50/60Hz	N/A
PSU Input Socket	IEC 320 C14	Terminal Block
PSU Output Cord	IEC 320 C13	N/A
Operating Conditions	0°-55° C operation	0°-55° C operation

Power Consumption

Table 16 includes power consumption information for Extreme 8720 switches.

Table 16: Power Consumption

Operating Mode	Test Conditions				Power Consumption		
	Fan Duty	Traffic Load	Port Status	Packet Length (Byte)	Dual Power: PSU1	Dual Power: PSU2	Single Power: PSU1
Empty mode	85%	N/A	Down	N/A	152.6 W	145.5 W	285.9 W
Standby mode	85%	N/A	Up	N/A	157.6 W 1	151.5 W	297.2 W
Typical mode	85%	70%	Up	1,518	165 W	159.8 W	313.6 W
Stress mode	100%	100%	Up	256	207.8 W	204.5 W	406.0 W

Power and Heat Dissipation

Table 17 includes power and heat dissipation information for Extreme 8720 switches.

Table 17: Power and Heat Dissipation

Switch Model	Minimum Heat Dissipation (BTU/hr) (Idle, no ports linked)	Minimum Power Consumption (Watts) (Idle, no ports linked)	Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic)	Maximum Power Consumption (Watts) (Fans high, all ports 100% traffic)
8720-32C-AC-F 8720-32C-AC-R	972 BTU/hr	285W	1340 BTU/hr	393W
8720-32C-DC-F 8720-32C-DC-R	975 BTU/hr	286W	1381 BTU/hr	405W

750 W Power Supplies Technical Specifications

Extreme 8720 switches support the following power supplies:

- Part number XN-ACPWR-750W-F (750 W AC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-ACPWR-750W-R (750 W AC power supply) provides back-to- front airflow for power supply cooling.

- Part number XN-DCPWR-750W-F (750 W DC power supply) provides front-to- back airflow for power supply cooling.
- Part number XN-DCPWR-750W-R (750 W DC power supply) provides back-to- front airflow for power supply cooling.

Table 18: 750 W Power Supplies: Unpackaged Dimensions

750 W power supply – AC front-to-back or back-to-front airflow	10.83 in W/16.73 in D/17.52 in H (27.5 cm/ 42.5 cm44.5 cm)
750 W power supply – DC front-to-back or back-to-front airflow	

Table 19: 750 W Power Supplies: Unpackaged Weight

750 W power supply – AC front-to-back or back-to-front airflow	10.22 kg (22.53 lb)
750 W power supply – DC front-to-back or back-to-front airflow	10.50 kg (23.15 lb)

Table 20: Power Specifications (AC Power Supplies)

Voltage input range	85 to 264 V ~
Nominal input ratings	100-140/200-240V ~, 10/5.36A max., 50/60Hz
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
Output	+12 V, 61.5 A +12 Vsb, 3 A Total output power not to exceed 750W
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 76

Table 20: Power Specifications (AC Power Supplies) (continued)

Power supply cord gauge	18 AWG (0.75 mm2) up to 6 feet or 2 meters or 16 AWG (1.0 mm2) over 6 feet
Efficiency	Low Line: 88% at 50% load and 86% at 100% load High Line: 90% at 50% and 100% loads

Table 21: Power Specifications (DC Power Supplies)

Nominal input	-48 to -60 VDC, 20.4 A
DC Voltage input range	-35 to -75 V
Inrush Current	21 A peak
Maximum wire size	14 AWG (1.5 mm2 copper stranded)
DC Output	+12.2VDC, 61.5A; +12Vaux, 2.5A
Power (W)	750 W

Table 22: Environmental Specifications (All Power Supply Units)

Operating temperature	0°C to 55°C (normal operation)
Storage temperature	-40°C to 70°C
Operating humidity	20% to 90% relative humidity, non-condensing
Operational shock	30 m/s2 (3 G)

Environmental

Environmental Specifications

EN/ETSI 300 019-2-1 v2.1.2 (2000 - 2009) - Class 1.2 Storage
EN/ETSI 300 019-2-2 v2.1.2 (1999 - 09) - Class 2.3 Transportation
EN/ETSI 300 019-2-3 v2.1.2 (2003 - 04) - Class 3.1e Operational
EN/ETSI 300 753 (1997-10) - Acoustic Noise
ASTM D3580 Random Vibration Unpackaged 1.5G

Environmental Operating Conditions

Front-to-back airflow: 0°C to 50°C (32°F to 122°F) up to 1800m (6000 ft)
Front-to-back airflow: 0°C to 45°C (32°F to 113°F) above 1800m (6000 ft)
Back-to-front airflow: 0°C to 45°C (32°F to 113°F) up to 1800m (6000 ft)
Back-to-front airflow: 0°C to 40°C (32°F to 104°F) above 1800m (6000 ft)
Humidity: 5% to 95% relative humidity, non-condensing
Altitude: 0 to 3,000 meters (9,850 feet)
Operational shock (half sine): 30 m/s2 (3 G), 11 ms, 60 shocks
Operational random vibration: 3 to 500 Hz at 1.5 G rms

Packaging and Storage Specifications

Temp: -40°C to 70°C (-40°F to 158°F)
Humidity: 5% to 95% relative humidity, non-condensing
Packaged Shock (half sine): 180 m/s2 (18 G), 6 ms, 600 shocks
Packaged Vibration: 5Hz to 62Hz at velocity 5 mm/s, 62Hz to 500Hz at 0.2 G
Packaged Random Vibration: 5Hz to 20Hz at 1.0 ASD w/–3 dB/oct. from 20Hz to 200Hz
Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Standards

North American Safety of ITE

UL 62368-1, Listed Device (US)
UL 60950-1, Listed Device (US)
CAN/CSA 22.2 #62368-1-14, Canada
CAN/CSA 22.2 #60950-1-07, Canada
Complies with FCC 21 CFR Chapter 1, Sub-chapter J in accordance with FDA & CDRH requirements (US Laser Safety)
CDRH Letter of Approval (US FDA Approval)

European Safety of ITE

EN 62368-1
EN 60950-1 2014/35/EU Low Voltage Directive

International Safety of ITE

CNS 14336-1
AS/NZX 60950-1 (Australia /New Zealand)
GB4943.1
IEC/EN 60825-1, IEC/EN 60825-2 (Lasers Safety)
IEC 62368-1
IEC 60950-1

EMI/EMC Standards

North American EMC for ITE

FCC 47 CFR part 15 subpart B Class A (USA)
IICES-003 (Canada)

European EMC Standards

EN 300 386 Class A
EN 55032 Class A
EN 55024
EN 55035
EN 55011 (Group 1, Class A)
EN 61000-6-2
EN 61000-6-4

EN 61000-3-2 Class A
EN 61000-3-3
EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-8
EN 61000-4-11

International EMC Certifications

IEC 61000-6-2
IEC 61000-6-4
IEC 61000-4-2
IEC 61000-4-3
IEC 61000-4-4
IEC 61000-4-5
IEC 61000-4-6
IEC 61000-4-8
IEC 61000-4-11
CISPER 32 Class A
CISPER 24 Class A
CISPER 11 Class A
AS/NZS CISPER 32 Class A
GB/T9254-2008 Class A
ANSI C63.4

Country Specific

RCM (Australia)
VCCI Class A (Japan)
MSIP KCC (Korea)
BSMI (Taiwan)
ANATEL (Brazil)
CCC mark (China)
NRCS (South Africa)
UL, FCC (North America)
EAC mark (Custom Union)

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

IEEE 802.3 Media Access Standards

IEEE 802.3ab 1000BASE-T

IEEE 802.3z 1000BASE-X
IEEE 802.3ae 10GBASE-X
IEEE 802.3ba 40GBASE-X

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 appropriate AC connector for connection to the switch or power supply. See the power supply documentation for the appropriate power cord.
- The power cord must have an appropriately rated and approved wall plug applicable to the country of installation.

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

Console Connector Pinouts

Table 23 describes the pinouts for a DB-9 console plug connector.

Table 23: Pinouts for the DB-9 Console Connector

Function	Pin Number	Direction
DCD (data carrier detect)	1	In
RXD (receive data)	2	In
TXD (transmit data)	3	Out
DTR (data terminal ready)	4	Out
GND (ground)	5	-
DSR (data set ready)	6	In
RTS (request to send)	7	Out
CTS (clear to send)	8	In

Figure 27 shows the pinouts for a 9-pin to 25-pin (RS-232) null-modem cable.

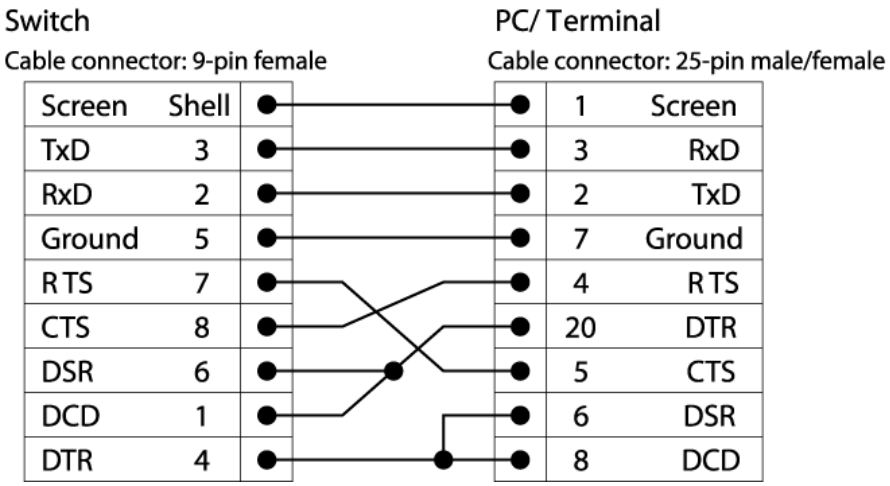


Figure 27: Null-Modem Cable Pinouts

Figure 28 shows the pinouts for a 9-pin to 9-pin (PC-AT) null-modem serial cable.

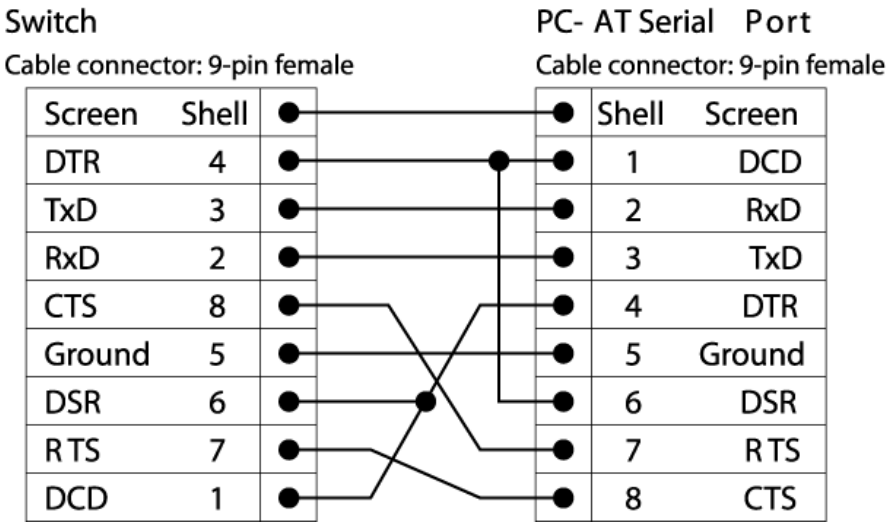


Figure 28: PC-AT Serial Null-modem Cable Pinouts

Table 24 shows the pinouts for the RJ45 console port on the ExtremeSwitching switches.

Table 24: RJ45 Console Port on Switch

Function	Pin Number	Direction
RTS (request to send)	1	Out
DTR (data carrier detect)	2	Out
TXD (transmit data)	3	Out
GND (ground)	4	—
GND (ground)	5	—
RXD (receive data)	6	In

Table 24: RJ45 Console Port on Switch (continued)

Function	Pin Number	Direction
DSR (data set ready)	7	In
CTS (clear to send)	8	In

Table 25 shows the pinouts for an RJ45-to-DB-9 adapter.

Table 25: Pinouts for an RJ45 to DB-9 Adapter

Signal	RJ45 Pin	DB-9 Pin
CTS (clear to send)	1	8
DTR (data carrier detect)	2	6
TXD (transmit data)	3	2
GND (ground)	4	5
GND (ground)	5	5
RXD (receive data)	6	3
DSR (data set ready)	7	4
RTS (request to send)	8	7

Safety Information

Considerations Before Installing on page 79
General Safety Precautions on page 80
Maintenance Safety on page 81
Fiber Optic Ports and Optical Safety on page 81
Cable Routing for LAN Systems on page 82
Install Power Supply Units and Connect Power on page 83
Select Power Supply Cords on page 84
Battery Notice on page 84
Battery Warning - Taiwan on page 85

Note
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).

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.

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.

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 EMC 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.

GBIC, SFP (Mini-GBIC), QSFP+, XENPAK, and XFP Regulatory Compliance

Extreme Networks pluggable optical modules and direct-attach cables meet the following regulatory requirements:

- Class 1 or Class 1M Laser Product
- EN60825-1:2007 2nd Ed. or later, European standard
- FCC 21 CFR Chapter 1, Subchapter J in accordance with FDA & CDRH requirements
- Application of CE Mark in accordance with 2014/30/EU EMC Directive and the 2014/35/EU Low Voltage Directives
- UL and/or CSA registered component for North America
- 47 CFR Part 15, Class A when installed into Extreme products

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 metallically 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 metallically 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 on page 67 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

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

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。

Regulatory Information

CE statement on page 86
EMC Warnings on page 87
China and Taiwan: Restriction of Hazardous Substances (ROHS) on page 87
Canadian requirements on page 87
China CCC statement on page 88
Australia (RCM) on page 88
Federal Communications Commission (FCC) Notice on page 88
Germany statement on page 89
KCC statement (Republic of Korea) on page 89
Japan (VCCI Class A) on page 89
Japan power cord on page 90

CE statement

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

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

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

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 and Taiwan: Restriction of Hazardous Substances (ROHS)

For more information, see https://www.extremenetworks.com/company/legal/restriction-of-hazardous-substances/.

Canadian requirements

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations, ICES-003 Class A.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

China CCC statement

China-CCC Warning statements

在维修的时候一定要断开所有电源 (English translation"disconnect all power sources before service")

For non tropical use:

安全说明和标记	汉文	"仅适用于非热带气候条件下安全使用。"
	藏文	[illegible]
	蒙古文	"ᠬᠥᠳᠥᠢᠨ ᠭᠠᠵᠠᠷ ᠤᠨ ᠭᠠᠷᠤᠯ ᠤᠨ ᠥᠨᠴᠥᠭᠲᠡᠢ ᠪᠤᠰᠤ ᠭᠠᠵᠠᠷ ᠳᠤ ᠠᠮᠤᠷ ᠲᠠᠢ ᠠᠵᠢᠯᠯᠠᠭᠠ ᠬᠢᠬᠡᠳ ᠬᠡᠷᠡᠭᠯᠡᠭᠡᠳᠡᠢ"
	壮文	Dan hab yungh youq gij dienheiq diuzgen mbouj dwg diegndat haenx ancienz sawjyungh.
	维文	غەيرى ئىسسىق بەلباغ ھاۋا كىلىماتى شارائىتىدىلا بىخەتەر ئىشلەتكىلى بولىدۇ

For altitude 2000 meter and below:

安全说明和标记	汉文	仅适用于海拔2000m以下地区安全使用。
	藏文	[illegible]
	蒙古文	"ᠲᠤᠩᠭᠠᠯᠠᠭ ᠳᠡᠭᠡᠰ ᠠᠰᠠᠭ ᠨᠢ ᠳᠡᠯᠬᠡᠢ ᠨᠢᠭᠤᠳ 2000ᠮ ᠳᠤ ᠪᠤᠢ ᠭᠠᠵᠠᠷ ᠳᠤ ᠠᠮᠤᠷ ᠲᠠᠢ ᠠᠵᠢᠯᠯᠠᠭᠠ ᠬᠢᠬᠡᠳ ᠬᠡᠷᠡᠭᠯᠡᠭᠡᠳᠡᠢ"
	壮文	Dan hab yungh youq gij digih haijbaz 2000m doxroengz haenx ancienz sawjyungh.
	维文	دېڭىز يۈزىدىن 2000 مېتر تۆۋەن رايونلاردىلا بىخەتەر ئىشلەتكىلى بولىدۇ

Warning for Class A:

声 明

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，可能需要用户对其干扰采取切实可行的措施。

English translation of above statement

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

Australia (RCM)

Warning

This equipment is compliant with Class B of CISPR 32. In a residential environment, this equipment may cause radio interference.

Federal Communications Commission (FCC) Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this

device must accept any interference received, including interference that may cause undesired operation.

Note
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment uses, generates, and can radiate radio frequency energy and if not installed in accordance with the operator's manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

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

Germany statement

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

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

KCC statement (Republic of Korea)

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

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

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機器です。この装置を住宅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

Japan power cord

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

English translation of above statement

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

Cautions

General cautions

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

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

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

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

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

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

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

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

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

VORSICHT	Stellen Sie sicher, dass an der Vorderseite, den Seiten und an der Rückseite der Luftstrom nicht behindert wird.
MISE EN GARDE	Vérifiez que rien ne restreint la circulation d'air devant, derrière et sur les côtés du dispositif et qu'elle peut se faire librement.
PRECAUCIÓN	Asegúrese de que el flujo de aire en las inmediaciones de las partes anterior, laterales y posterior del instrumento no esté restringido.

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

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

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

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

Caution
Never leave tools inside the chassis.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

VORSICHT	Es empfiehlt sich die Installation eines separaten Stromkreiszweiges für jede Elektroschnur als Redundanz im Fall des Ausfalls eines Stromkreises.
MISE EN GARDE	Utilisez un circuit de dérivation différent pour chaque cordon d'alimentation ainsi, il y aura un circuit redondant en cas de panne d'un des circuits.
PRECAUCIÓN	Use un circuito derivado separado para cada cordón de alimentación, con lo que se proporcionará redundancia en caso de que uno de los circuitos falle.

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

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

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

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

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

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

Danger Notices

General dangers

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

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

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

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

Warning
The procedures in this manual are for qualified service personnel.

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

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

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

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

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

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

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

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.

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

Warning
Before beginning the installation, see the precautions in “Power precautions.”

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

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

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

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

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

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.

GEFAHR	Falls für die Installation ein anderes Stromkabel erforderlich ist (wenn das mit dem Gerät gelieferte Kabel nicht passt), müssen Sie sicherstellen, dass Sie ein Stromkabel mit dem Siegel einer Sicherheitsbehörde verwenden, die für die Zertifizierung von Stromkabeln in Ihrem Land zuständig ist. Das Siegel ist Ihre Garantie, dass das Stromkabel sicher mit Ihrem Gerät verwendet werden kann.
DANGER	Si l'installation nécessite un cordon d'alimentation autre que celui fourni avec le dispositif, assurez-vous d'utiliser un cordon d'alimentation portant la marque de l'organisation responsable de la sécurité qui définit les normes et régulations pour les cordons d'alimentation dans votre pays. Cette marque vous assure que vous pouvez utiliser le cordon d'alimentation avec le dispositif en toute sécurité.
PELIGRO	Si la instalación requiere un cordón de corriente distinto al que se ha suministrado con el instrumento, verifique que usa un cordón de corriente que venga con la marca de la agencia de seguridad que defina las regulaciones para cordones de corriente en su país. Esta marca será su garantía de que el cordón de corriente puede ser utilizado con seguridad con el instrumento.

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

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

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

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

Warning
Use safe lifting practices when moving the product.

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

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

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

Warning
All fiber-optic interfaces use Class 1 lasers.

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

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

GEFAHR	Laserstrahlung! Schauen Sie nicht direkt mit optischen Instrumenten in den Laserstrahl herein. Klasse 1M Laserprodukte.
DANGER	Rayonnement de laser. Ne regardez pas directement avec des instruments optiques. Produits de laser de classe 1M.
PELIGRO	Radiacion de Laser. No vea directamente con Instrumentos Opticos. Clase 1M de Productos de Laser.
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Warning
Use only optical transceivers that are qualified by Extreme Networks, Inc. and comply with the FDA Class 1 radiation performance requirements defined in 21 CFR Subchapter I, and with IEC 60825 and EN60825. Optical products that do not comply with these standards might emit light that is hazardous to the eyes.

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