Extreme 8520 Series Hardware Installation Guide

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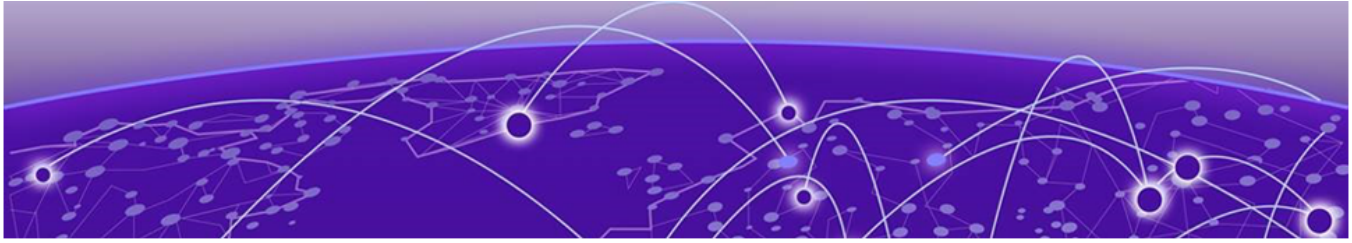

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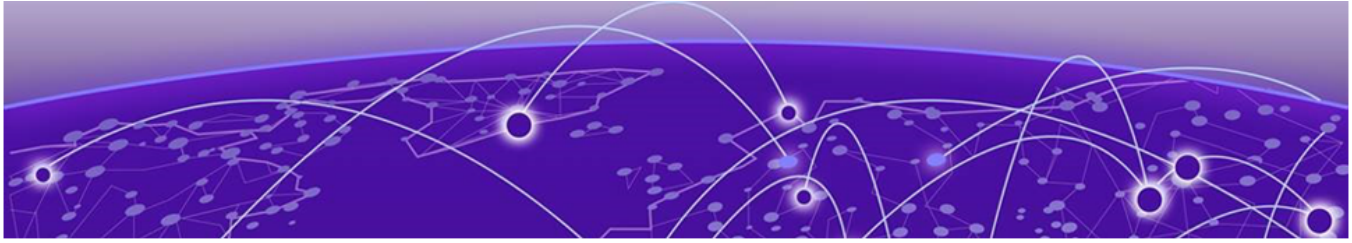


Preface

Read the following topics to learn about:

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

Audience

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 SLX 20.3.3 User Guide* and the *Extreme SLX 20.3.3 Command Reference Guide* for information about configuring Extreme Networks devices.

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.

Conventions

To help you better understand the information presented in this guide, the following topics describe the formatting conventions used for notes, text, and other elements.

Text Conventions

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

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an

entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings

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

Table 2: Text

Convention	Description
`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.
`[ ]`	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.

Terminology

When features, functionality, or operation is specific to a device family, such as ExtremeSwitching, the family name is used. Explanations about features and operations that are the same across all product families simply refer to the product as the *device*.

Send Feedback

The Information Development team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, so we want to hear from you. We welcome all feedback, but we especially want to know about:

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

To send feedback, do either of the following:

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

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

Help and Support

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

Extreme Portal

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

The Hub

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

Call GTAC

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

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

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

Subscribe to Product Announcements

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

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

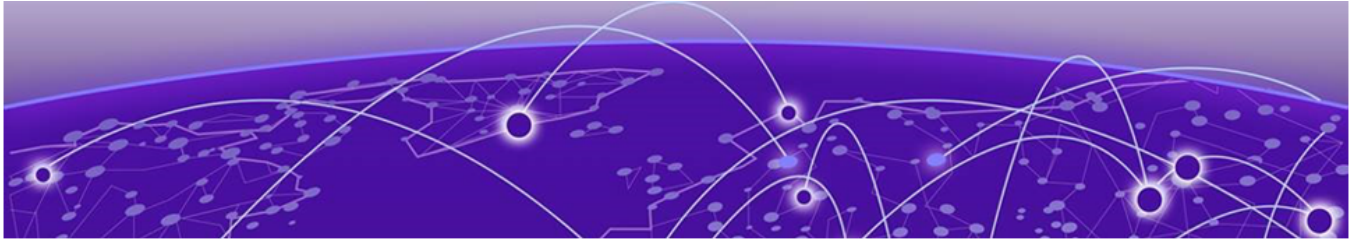
You can modify your product selections or unsubscribe at any time.

Documentation and Training

Find Extreme Networks product information at the following locations:

- Current Product Documentation
- Release Notes
- Hardware and software compatibility for Extreme Networks products
- Extreme Optics Compatibility
- Other resources such as white papers, data sheets, and case studies

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



Extreme 8520 Series Overview

The Extreme 8520 switches are purpose-built high density 1/10/25/40/100GbE fixed form factor switches designed for large scale data centers at service providers and large enterprise customers. They deliver scalable L2 and L3 resources with advanced features for network monitoring and network virtualization. The 8520 switch is a top-of-rack leaf switch that offers 48 1/10/25 GbE SFP28 ports and 8 100/40 GbE QSFP28 ports with 32 MB of packet buffer and an overall throughput of 2 Tbps in and out nonblocking switching capacity. SFP and QSFP ports offer a choice of speeds —including 100, 40, 25, 10, or 1 GbE — along with a wide choice of transceivers and cables. Ports can be mixed, offering flexible design options to cost-effectively support demanding data center and service provider environments.

The Extreme 8520 Series switches run the Extreme SLX-OS operating system.

Switch License Option

Table 4: 8520 Switch License Option

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

For information about licensing option for SLX-OS support for 8520 Series switches, reference *Extreme SLX-OS Software Licensing Guide*.

Management

An RJ45 serial console port on the front panel of the 8520 Series switch enables you to connect a terminal and perform local management. An Ethernet management port can be used to connect the system to an out of band management network for administration. Alternatively, you can use an Ethernet cable to connect this port directly to a laptop to view and locally manage the switch configuration. The Ethernet management port supports 10/100/1000 Mbps speeds.

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

Table 5: Management options for the device

Management tool	Out-of-band support	In-band support	Reference documents
Command line interface (CLI)	Ethernet or serial connection	N/A	*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	N/A

There is also a Type A USB 2.0 port that can host removable devices like flash drives.

Cooling

Six fan bays located in the rear of the switch accommodate hot-swappable fan modules that cool the switch. The fan modules are available with front-to-back or back-to-front airflow. The direction of the airflow of all six fans must be the same. Power supplies have integrated cooling fans that operate independently of the switch fans. The direction of the airflow in the fans and power supplies must be the same.

Fans are ordered separately for base models 8520-48Y-8C and 8520-48XT-6C. Fans are included with other models.

Power Supplies

Two power supply bays located in the rear of the switch accommodate hot-swappable 750 W AC or DC power supplies that power the switch. The switch supports two AC or two DC power supplies, or one AC and one DC power supply. For more information about the power supplies used in the 8520 Series switches, see Power Supplies for Use with Your Switch on page 16.

Power supplies are ordered separately for base models 8520-48Y-8C and 8520-48XT-6C. Power supplies are included with other models.

8520-48Y Switch Features

The 8520-48Y Series includes the following models:

8520-48Y-8C

The 8520-48Y-8C base switch includes six unpopulated fan module slots and two unpopulated power supply module slots. Fan modules and power supply modules must be ordered separately.

8520-48Y-8C-AC-F

The 8520-48Y-8C-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.

8520-48Y-8C-AC-R

The 8520-48Y-8C-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.

8520-48Y-8C-DC-F

The 8520-48Y-8C-DC-F switch includes two DC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is front-to-back.

8520-48Y-8C-DC-R

The 8520-48Y-8C-DC-R switch includes two DC 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 8520-48Y Series switch includes:

- 48 1/10/25GbE SFP28 ports
- 8 40/100GbE QSFP28 ports
- 1 Serial console RJ-45 port
- 1 10/100/1000BASE-T out-of-band management port
- 1 Type A USB storage port

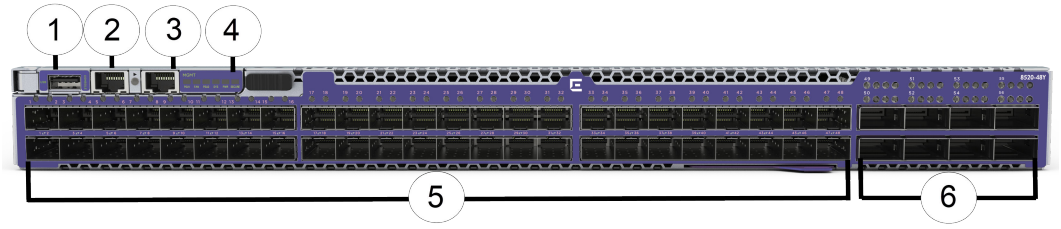


Figure 1: 8520-48Y Series Front Panel

1 = USB Type A port	3 = 10/100/1000BASE-T OOB management port	5 = 1/10/25Gbe SFP28 ports
2 = Serial console port RJ-45	4 = System LEDs	6 = 40/100Gbe QSFP28 ports

The rear panel of the switch includes:

- 6 fan module slots
- Grounding lug

- 2 power supply slots

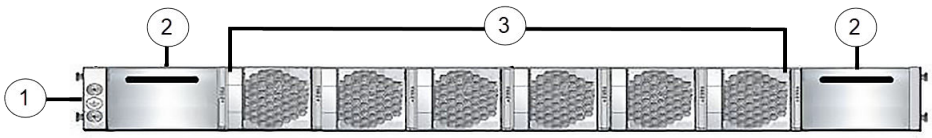


Figure 2: 8520-48Y Series Rear Panel

1 = Grounding lug	2 = Power supply slots	3 = Fan module slots

8520-48XT Switch Features

The 8520-48XT Series includes the following models:

8520-48XT-6C

The 8520-48XT-6C base switch includes six unpopulated fan module slots and two unpopulated power supply module slots. Fan modules and power supply modules must be ordered separately.

8520-48XT-6C-AC-F

The 8520-48XT-6C-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.

8520-48XT-6C-AC-R

The 8520-48XT-6C-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.

8520-48XT-6C-DC-F

The 8520-48XT-6C-DC-F switch includes two DC power supply modules and six fan modules. Airflow for both the fan modules and the powers supply modules is front-to-back.

8520-48XT-6C-DC-R

The 8520-48XT-6C-DC-R switch includes two DC 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 8520-48XT switch includes:

- 48 1/10GbE 10GBaseT RJ-45 ports
- 6 40/100GbE QSFP28 ports
- 1 Serial console RJ-45 port
- 1 10/100/1000BASE-T out-of-band management port
- 1 Type A USB storage port

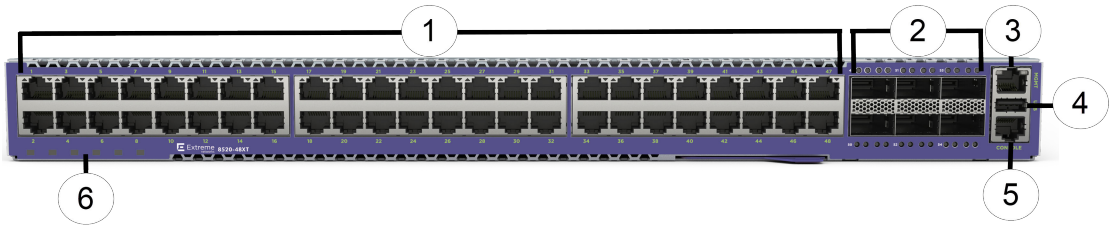


Figure 3: 8520-48XT Series Front Panel

1 = 1/10GbE 10GBaseT RJ-45 ports	3 = 10/100/1000BASE-T OOB management port	5 = Serial console port RJ-45
2 = 40/100Gbe QSFP28 ports	4 = USB Type A port	6 = System LEDs

The rear panel of the switch includes:

- 6 fan module slots
- Grounding lug
- 2 power supply slots

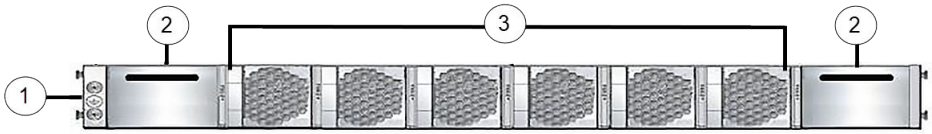


Figure 4: 8520-48XT Series Rear Panel

1 = Grounding lug	2 = Power supply slots	3 = Fan module slots

Power Supplies for Use with Your Switch

Each 8520 Series switch runs with two replaceable internal power supply modules that provide all of the power needed for the switch to operate. You can remove one power supply module without interrupting the switch's operation. Supported power supply configurations include two 750 W AC power supply modules, two 750 W DC power supply modules, or one 750 W AC and one 750 W DC power supply module. Power supply modules have integrated cooling fans that operate independently of the switch fans, and are available with front-to-back or back-to-front airflow. The direction of the airflow in both power supply modules must be in the same direction, and must also be the in same direction of the airflow in the fan modules.

Power supply modules are ordered separately for base models 8520-48Y-8C and 8520-48XT-6C. Power supply modules are included with other models.

Precautions Specific to Power Supply Modules

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

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

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

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

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

750 W AC Power Supply

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

- 750W AC power supply - front-to-back airflow (part no. XN-ACPWR-750W-F)
- 750W AC power supply - back-to-front airflow (part no. XN-ACPWR-750W-R)

Note
AC power input cords are not provided with AC power supplies. You can order an appropriate cord from Extreme Networks or from your local supplier. The power cord must meet the requirements listed in Power Cord Requirements for AC-Powered Switches and AC Power Supplies on page 78.

For information on installing or replacing an AC power supply, see Install a 750 W Internal AC Power Supply on page 41.

LEDs on the 750 W AC power supply provide information on the unit's operational status. See 750 W AC Power Supply LEDs on page 61 for details.

750 W DC Power Supply

Two 750 W DC power supply options, with front-to-back or back-to-front airflow, are provided for 8520 switches.

- 750W DC power supply - front-to-back airflow (part no. XN-DCPWR-750W-F)
- 750W DC power supply - back-to-front airflow (part no. XN-DCPWR-750W-R)

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 DC power supply, see Install a 750 W Internal DC Power Supply on page 43.

LEDs on the 750 W DC power supply provide information on the unit's operational status. See 750 W DC Power Supply LEDs on page 61 for details.

Site Preparation

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 these topics 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 Safety Information on page 82.

Plan Your Site

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

1. Meeting site requirements.

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

   - Building and electrical code requirements
   - Environmental, safety, and thermal requirements for the equipment you plan to install

- Equipment rack requirements

2. Evaluating and meeting cable requirements.

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

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

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

Operating Environment Requirements

Verify that your site meets all environmental and safety requirements.

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

Meet Building and Electrical Codes

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

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

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

The organizations listed in Table 6 are authorities on electrical codes.

Table 6: Authorities on Electrical Codes

Organization	Address	Web Site URL
National Electrical Code (NEC) Classification (USA only) Recognized authority on safe electrical wiring. Federal, state, and local governments use NEC standards to establish their own laws, ordinances, and codes on wiring specifications. The NEC classification is published by the National Fire Protection Association (NFPA).	NFPA 1 Batterymarch Park Quincy, MA 02169 USA	www.nfpa.org/
Underwriters' Laboratory (UL) Independent research and testing laboratory. UL evaluates the performance and capability of electrical wiring and equipment to determine whether they meet certain safety standards when properly used. Acceptance is usually indicated by the words "UL Approved" or "UL Listed."	UL 333 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 22 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 7 summarizes the behavior of ExtremeSwitching 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 7: Thermal Shutdown and Restart Behavior

Switch Model(s)	Behavior
All models	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)

Before You Begin

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

Procedure

- Remove materials that can cause electrostatic generation (such as synthetic resins) from the wiring closet.

  Check the appropriateness of floor mats and flooring.
- Connect metal chassis, conduit, and other metals to ground using dedicated grounding lines.
- Use electrostatically safe equipment.

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

Rack Specifications and Recommendations

Racks should conform to conventional standards.

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

Mechanical Recommendations for the Rack

Use equipment racks that meet the following mechanical recommendations:

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

Ground the Rack

The rack must be properly grounded.

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

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

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

  AC-powered switches do not need separate chassis grounding.
- Position the earth ground as close to the equipment rack as possible to maintain the shortest wiring distance possible.
- Use a ground impedance tester or micro-ohm meter to test the quality of earth ground connection at the chassis. This will ensure good grounding between the chassis, rack, and earth ground.

Note
Because building codes vary worldwide, 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.

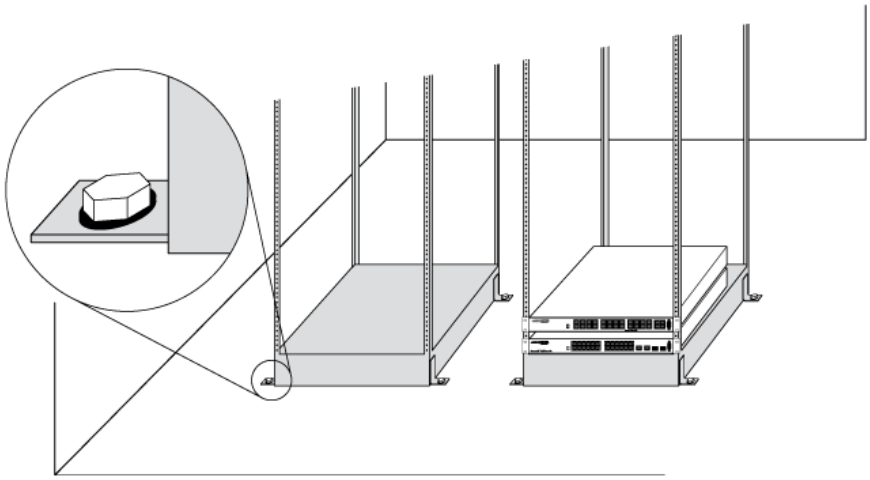


Figure 5: Properly Secured Rack

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

About This Task

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:

Procedure

- 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

About This Task

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

Procedure

- 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 6 on page 26.
- 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.

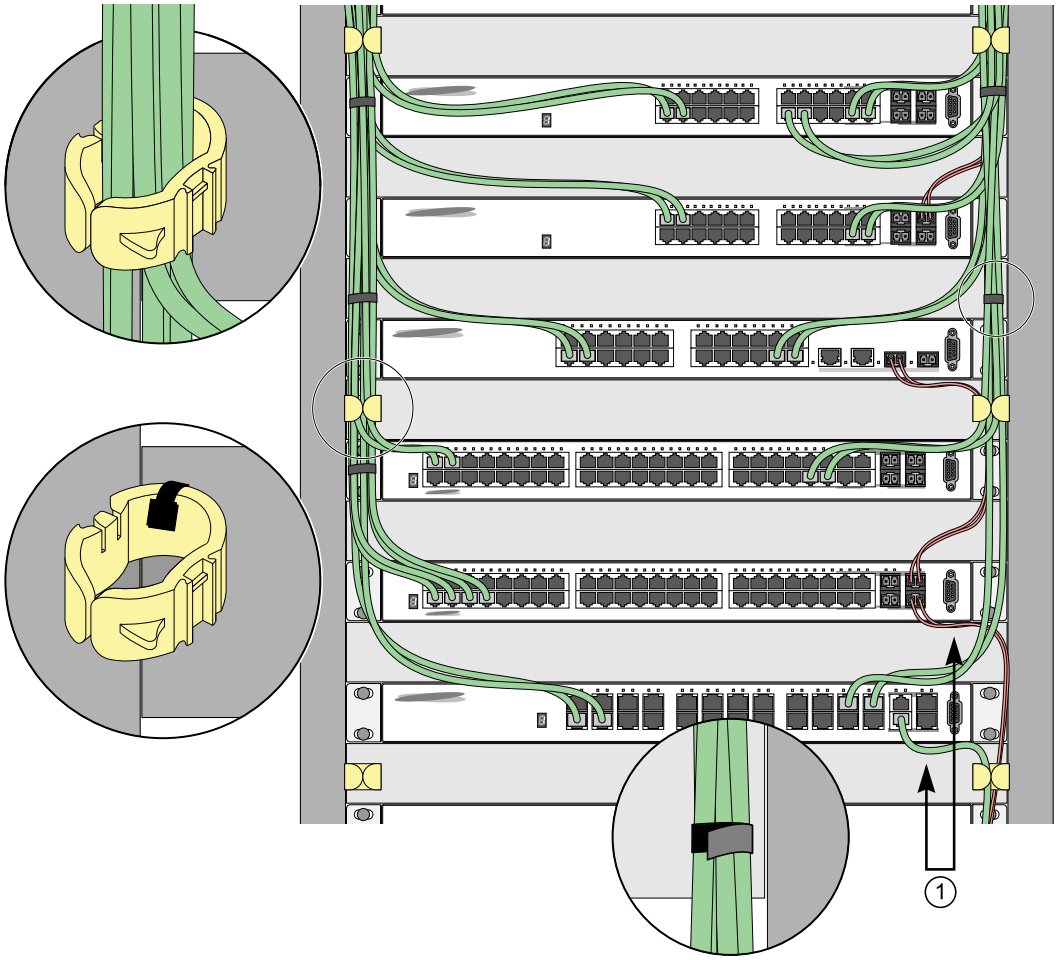


Figure 6: Properly Installed and Bundled Cable

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, example, 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 7.

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.

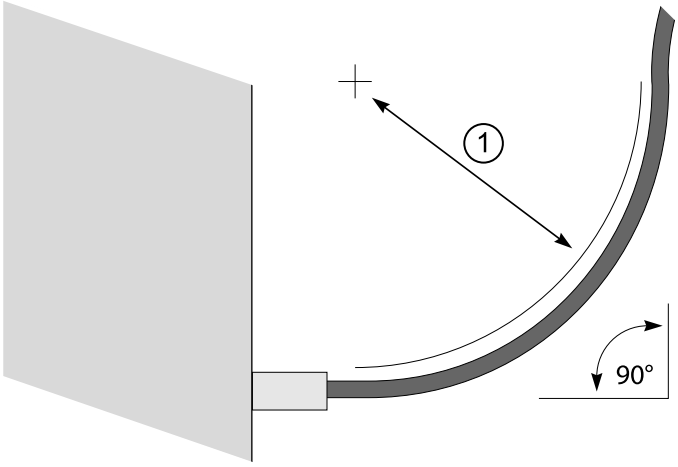


Figure 7: Bend Radius for Fiber Optic Cable

1 = Minimum 5 cm (2 in) radius in 90° bend

Cable Distances and Types

Table 8 shows one example of cable media types and maximum distances that support reliable transmission in accordance with international standards (except where noted). 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.

Table 8: Cable Distances and Types

Standard	Media Type	MHz·km Rating	Maximum Distance (Meters)
1000BASE-SX (850nm optical window)	50/125 µm multimode fiber	400	500
	50/125 µm multimode fiber	500	550
	62.5/125 µm multimode fiber	160	220
	62.5/125 µm multimode fiber	200	275

Table 8: Cable Distances and Types (continued)

Standard	Media Type	MHz·km Rating	Maximum Distance (Meters)
1000BASE-LX (1300nm optical window)	50/125 µm multimode fiber	400	550
	50/125 µm multimode fiber	500	550
	62.5/125 µm multimode fiber	500	550
	10/125 µm single-mode fiber	–	5,000
	10/125 µm single-mode fiber	–	10,000
1000BASE-ZX (1550nm optical window)	10/125 µm single-mode fiber	–	80,000
100BASE-LX100 (1550nm optical window)	10/125 µm single-mode fiber	–	100,000
1000BASE-BX10 (1490nm optical window) (1310nm optical window)	10/125 µm single-mode fiber	–	10,000
1000BASE-LX70 (1550nm optical window)	10/125 µm single-mode fiber	–	70,000
10/100/1000BASE-T SFP	(1 Gbps link) Category 5 and higher UTP cable	–	100
	(100 Mbps link) Category 5 and higher UTP cable	–	150
	(10 Mbps link) Category 5 and higher UTP cable	–	250
10GBASE-T SFP+	(10 Gb links) Category 6A and higher UTP cable	–	30
10GBASE-SR SFP+ (850nm optical window)	62.5 µm multimode fiber	160	26
	62.5 µm multimode fiber (OM1)	200	33
	50 µm multimode fiber	400	66
	50 µm multimode fiber (OM2)	500	82
	50 µm multimode fiber (OM3)	2000	300
10GBASE-LR SFP+ (1310nm optical window)	10/125 µm single-mode fiber	–	10,000
10GBASE-LRM SFP+ (1310nm optical window)	62.5/125 µm multimode fiber	–	220

[1] Proprietary to Extreme Networks. Connections between two Extreme Networks 1000BASE-LX interfaces that use 10/125 µm single-mode fiber can use a maximum distance of 10,000 meters.

Table 8: Cable Distances and Types (continued)

Standard	Media Type	MHz·km Rating	Maximum Distance (Meters)
10GBASE-ER SFP+ (1550nm optical window)	10/125 µm single-mode fiber	–	40,000
40GBASE-SR4 QSFP+ (850nm optical window)	50 µm multimode fiber (OM3)	–	100
	50 µm multimode fiber (OM4)		150
1000BASE-T	Category 5 and higher UTP cable	–	100
100BASE-TX	Category 5 and higher UTP cable	–	100
10BASE-T	Category 3 and higher UTP cable	–	100

Refer to the Extreme Optics website for details about direct-attach cables that are supported by this 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 8 shows examples of recommended and non-recommended connector jacket types.

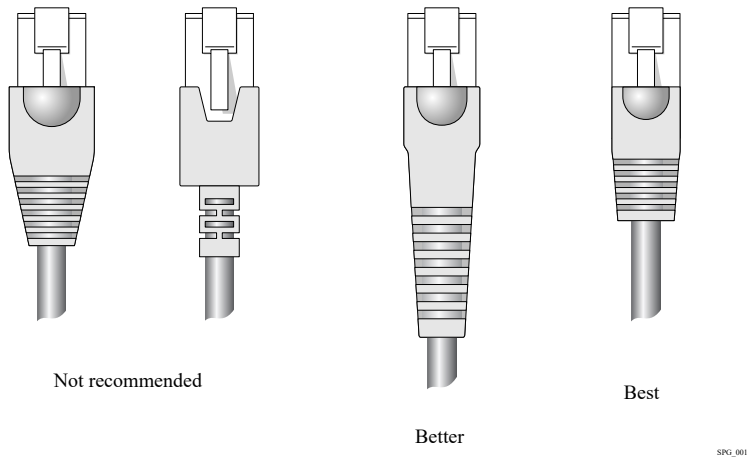


Figure 8: RJ45 Connector Jacket Types

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."

Power Cord Requirements

Most ExtremeSwitching 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 32.)

Note
Use a UPS that provides online protection.

Calculate Volt-Amperage Requirements

About This Task

To determine the size of UPS that you need:

Procedure

1. Locate the voltage and amperage requirements for each piece of equipment.

   These numbers are usually found on a sticker on the back or bottom of your equipment.
2. Multiply the numbers together to get Volt-Amperes (VA):

   VA = 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: www.ansi.org or www.tiaonline.org.

Install the Switch

Before you attempt to install or remove an Extreme Networks switch, read the precautions in Safety Considerations for Installation on page 34.

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:

1. Prepare to install the switch. See What You Will Need for the Installation on page 34.
2. Install the switch in the rack. See Attach the Switch to a Rack or Cabinet on page 35.
3. Install optional components: optical transceivers and cables. See the instructions in Install Optional Components on page 40.
4. If your switch does not come with an installed internal power supply, install one or two power supplies. See Install Internal Power Supplies on page 41.

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

5. Power up the switch. See Turn on the Switch on page 47.
6. Connect network interface cables. See Connect Network Interface Cables on page 48.
7. Perform initial network connection and configuration. See Activate and Verify the Switch on page 49.

Safety Considerations for Installation

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

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

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

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

Do not cover vents that would restrict airflow.

Note
See Safety Information on page 82 for additional safety information.
See Regulatory Information on page 88 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 18, and ensure that you have the appropriate people and tools on hand.

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

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

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

Check the *Quick Reference Guide* for your switch model to see what hardware is provided in the switch packaging. MicoVSP switches do not come with rack-mounting brackets or screws.

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

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

Attach the Switch to a Rack or Cabinet

The 8520 Series 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.
- Two-post rack, using mounting brackets (not provided) to attach the front or the middle of the switch to the posts.

To attach a switch to a two-post rack, a four-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

A four-post rack-mounting kit is included in the box with your switch. The kit contains an instruction sheet, along with the following components:

- Two mounting brackets, known as *inner member* in the instruction sheet. These pieces attach directly to both sides of the 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)

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

1. On one side of the switch, locate and remove the 2 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.
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.

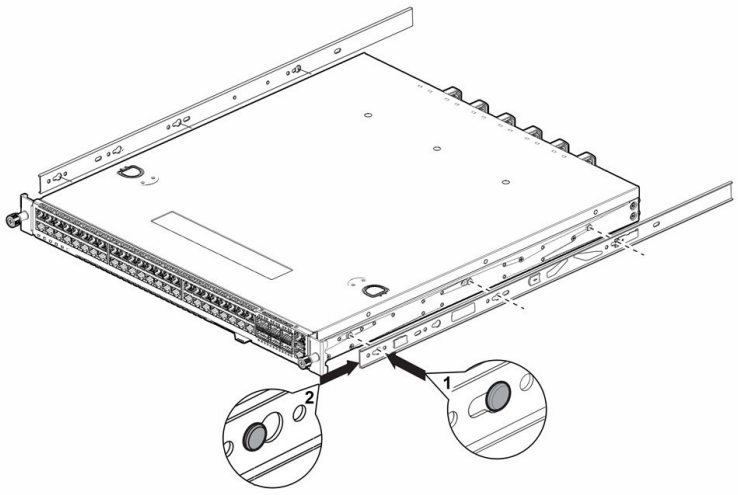


Figure 9: Attaching a Mounting Bracket to One Side of the Switch Housing

5. Attach the slider assemblies to the front and rear rack posts, clicking into place at each end.

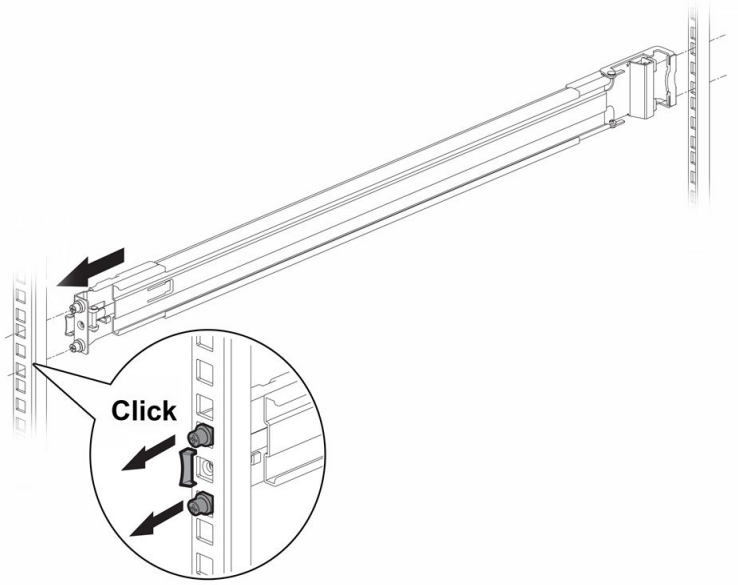


Figure 10: Attaching the Slider Assembly to the Front Rack Post

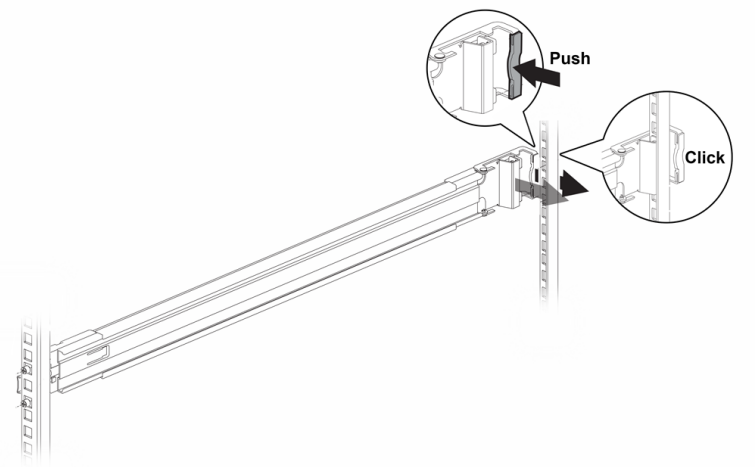


Figure 11: Attaching the Slider Assembly to the Rear Rack Post

6. Locate the intermediate rail inside each slider assembly and pull it out to its fullest extent. (It remains attached to the slider assembly.)

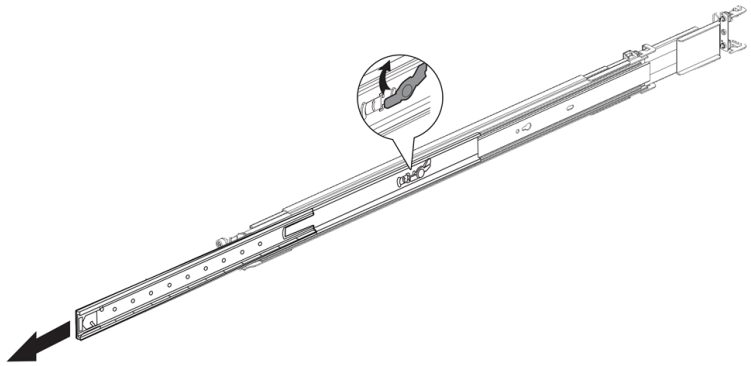


Figure 12: Extending the Slider Assembly to Fit the Rack

7. Push the switch in until both mounting brackets engage with the sliding rails.

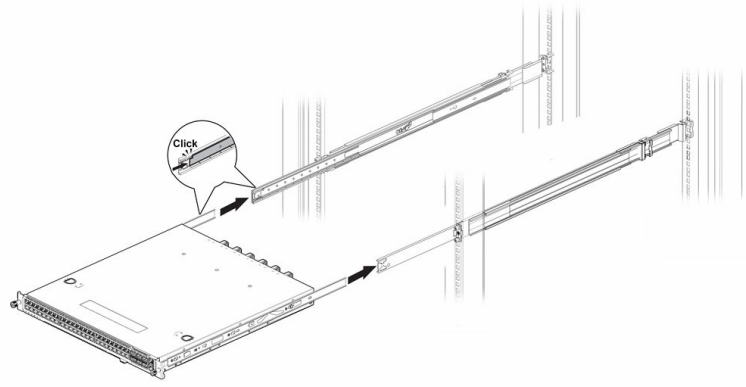


Figure 13: Engaging the Mounting Brackets with the Rail Assemblies

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

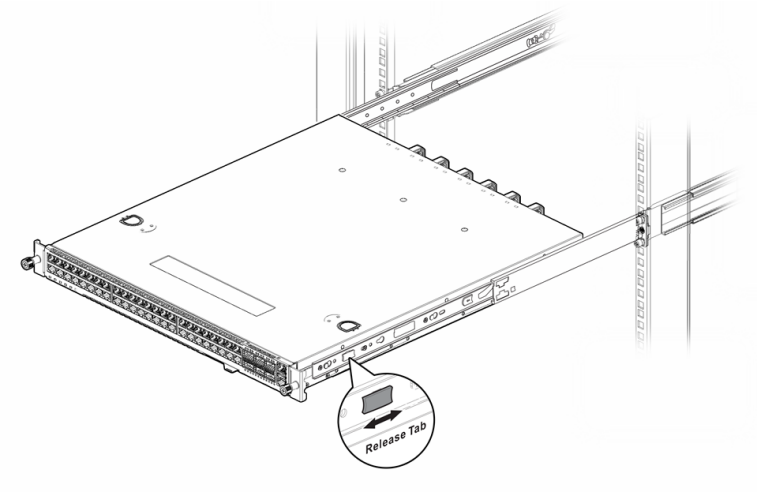


Figure 14: Pushing the Mounting Brackets into the Rail Assemblies

9. Screw the mounting ear thumbscrews into the rack rails to hand tightness.

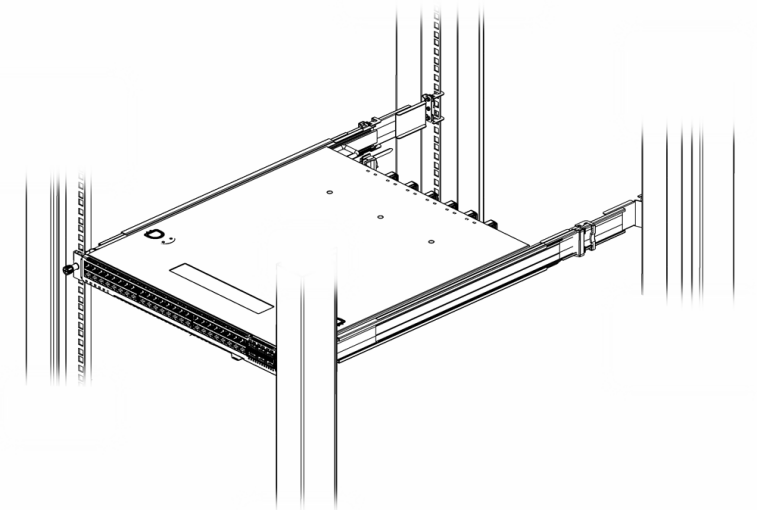


Figure 15: Completed Installation: Switch in 4-Post Rack

Two-Post Rack Mount

You can attach the switch to a two-post rack in either of two configurations:

- Front mount
- Mid-mount

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

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.

To attach the switch to a two-post rack, follow these steps:

1. On one side of the switch, attach one of the short mounting brackets to the switch housing.
   a. For a front mount, position the bracket over the holes so that the flange (ear) is even with the front of the switch, as shown in the figure below:

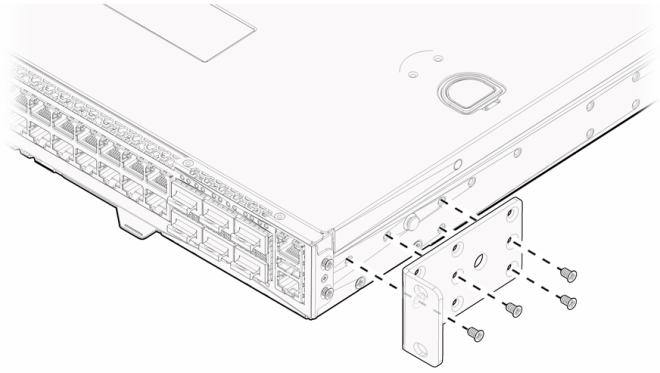


Figure 16: Attaching a Short Mounting Bracket (Ear): Front of Switch

   b. For a mid-mount, position the bracket so that the flange (ear) is positioned slightly more than halfway between the front and back of the switch, as shown in figure below:

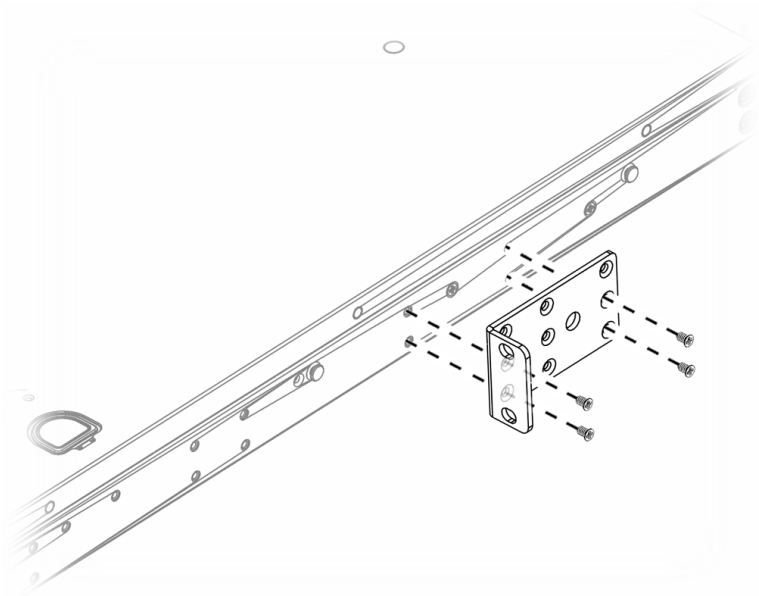


Figure 17: Attaching a Short Mounting Bracket (Ear): Middle of Switch

   c. Use four small mounting screws (provided) to attach the bracket to the switch.
2. Attach the other short mounting bracket to the other side of the switch housing, as you did in step 2.
3. Secure the brackets to the rack posts using rack-mounting screws that are appropriate for the rack (not provided).

If the switch comes with installed AC power supplies, skip to the topic: Turn on the Switch on page 47.

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 41.

Install Optional Components

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

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

For a list of the optical components supported with ExtremeSwitching devices, see the Extreme Optics website.

Pluggable Transceiver Modules

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

Optical Cables

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

Breakout cables

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

For the 8520-48Y switch, interfaces 0/49 and 0/56 support up to 8 10GbE or up to 8 25GbE ports in breakout mode when using the appropriate optics. See the Extreme Optics website to determine the appropriate optics.

For the 8520-48XT switch, interfaces 0/49 and 0/54 support up to 8 10GbE or up to 8 25GbE ports in breakout mode when using the appropriate optics. See the Extreme Optics website to determine the appropriate optics.

The first and last ports of the 8520 Series uplinks are capable of breakouts (they are color coded differently too).

- For 8520-48Y models, the 1st and last uplink ports are ports 49 and 56
- For 8520-48XT models, the 1st and last uplink ports are ports 49 and 54

Install Internal Power Supplies

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

The 8520 Series switch supports 750 W power supply units using either AC or DC power.

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

- If the power supply module has a **red** tab, the airflow is front-to-back.
- If the power supply module has a **blue** tab, the airflow is back-to-front.

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

- Install a 750 W Internal AC Power Supply on page 41
- Install a 750 W Internal DC Power Supply on page 43

Install a 750 W Internal AC Power Supply

About This Task

To install a 750 W AC power supply in a switch, follow these instructions.

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

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

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

Procedure

1. If necessary, remove a blank panel from the back of the switch.
2. Verify that the new power supply is right side up.
3. Verify that the new power supply's airflow direction (front-to-back or back-to-front) is compatible with the other installed power supply (if any) and with the installed fan modules.

4. Carefully slide the power supply all the way into the power supply bay (see Figure 18).

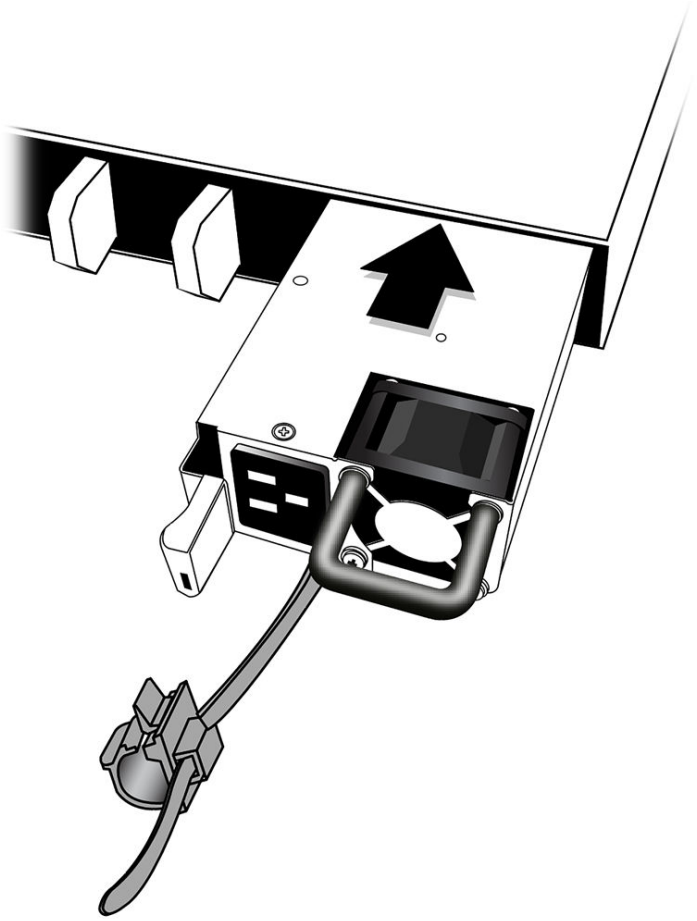


Figure 18: Installing a 750 W AC Power Supply

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

   Do not slam the power supply into the switch.

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

6. 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 - Figure 19 shows the power supply with the power cord and retainer in place.

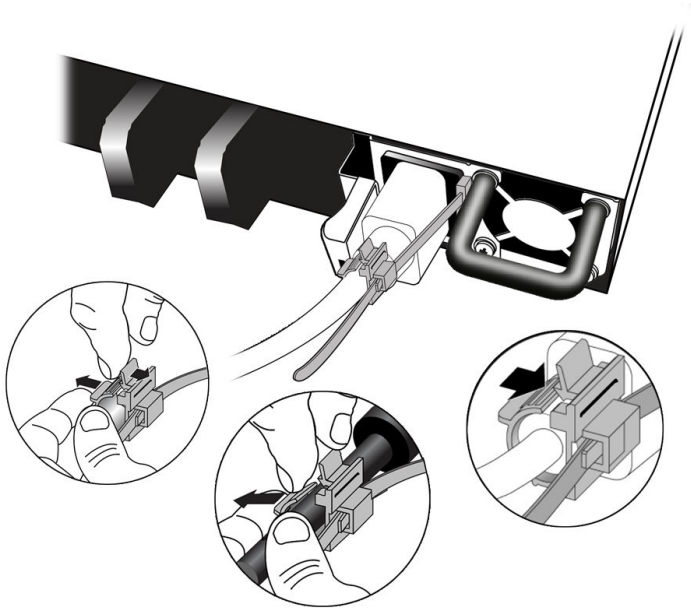


Figure 19: Power Supply with Power Cord and Retainer Attached

d. Snap the clip firmly around the connector.

7. Connect the other end of the power cord to an AC power outlet.

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

What to Do Next

To install a second power supply, repeat this procedure.

When you are finished, follow the steps in Turn on the Switch on page 47.

Install a 750 W Internal DC Power Supply

About This Task

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

To install a 750 W DC power supply in a switch, perform the following tasks in the order listed:

Procedure

1. Make sure you have the tools and materials you need.

   See Required Tools and Materials for Installing a 750 W DC Power Supply on page 44.
2. Prepare the power cables and ground cable by stripping off the insulation.

   See Preparing the Cables for a 750 W DC Power Supply on page 44.
3. Insert the power supply into the switch.

   See Installing a 750 W DC Power Supply on page 45.
4. Connect the ground wire to the power supply.

   See Connecting the Ground Wire to a 750 W DC Power Supply on page 45.
5. Connect the power supply to the DC source voltage.

   See Connecting a 750 W DC Power Supply to the Source Voltage on page 46.
6. Energize the DC circuit.

Required Tools and Materials for Installing a 750 W DC Power Supply

You need the following tools and materials to install or remove a 750 W DC power supply in an 8520 Series switch.

- #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)

Preparing the Cables for a 750 W DC Power Supply

Before You Begin

You will need two cable wires for each installed DC power supply: one input cable and a grounding cable. As a best practice, each cable should have differently colored insulation, as described in Required Tools and Materials for Installing a 750 W DC Power Supply on page 44.

About This Task

To prepare the cable wires, follow these steps:

Procedure

1. Strip 6 mm (0.25 inch) of insulation from one end on each cable wire if necessary.

2. Repeat step 1 for the other cable wire.

Installing a 750 W DC Power Supply

Before You Begin

Before installing a 750 W DC power supply (part no. XN-DCPWR-750W-F or XN-DCPWR-750W-R):

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

About This Task

To install the power supply, follow these steps:

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

Procedure

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 rear of the switch.
3. Verify that the power supply is right side up (label on the bottom).
4. Carefully slide the power supply all the way into the power supply bay.
5. Push the power supply in until the latch snaps into place.

Caution
Do not slam the power supply into the switch.

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

What to Do Next

When you are finished, connect the ground wire to each power supply. See Connecting the Ground Wire to a 750 W DC Power Supply on page 45.

Connecting the Ground Wire to a 750 W DC Power Supply

About This Task

Follow these steps to connect the ground wire to a 750 W DC power supply.

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

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

Procedure

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. Connect the ground wire to the grounding point on the power supply, labeled GND in the following figure:

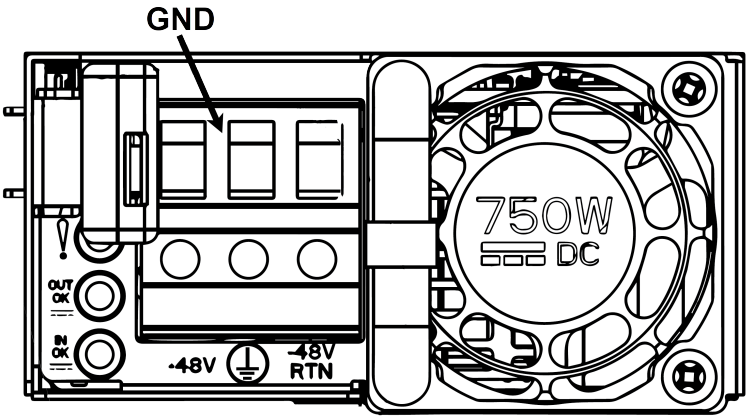


Figure 20: Front view of 750 W DC PSU

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

   a. Attach the 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.

What to Do Next

When you have connected the ground wire, connect the power supply to the power source using the two input cables. Follow the instructions in Connecting a 750 W DC Power Supply to the Source Voltage on page 46.

Connecting a 750 W DC Power Supply to the Source Voltage

About This Task

Two 750 W DC power supply modules are available: models XN-DCPWR-750W-F (front-to-back airflow) and XN-DCPWR-750W-R (back-to-front airflow). They can connect to a –48 V power source.

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

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

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

Procedure

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.

What to Do Next

Power up to the switch, following the steps in Turn on the Switch on page 47.

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

Turn on the Switch

Before You Begin

An AC power cord is not included with the AC power supply. You can purchase AC power cords for use in the US and Canada from Extreme Networks or from your local supplier. The cord must mee the requirements listed in Power Cord Requirements for AC-Powered Switches and AC Power Supplies on page 78.

About This Task

Use the following instructions to turn on the device.

Procedure

1. For devices that are connected to AC power, connect the power cord to the AC power input socket on the device (or power supply) and to an AC power outlet.
2. For devices that are connected to DC power, do the following:
   a. Verify that the DC circuit is de-energized.
   b. Verify that the ground wire is connected to the grounding lug on the rear of the device.

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

c. Verify that the DC power input cables are properly connected to the DC power supplies at the rear of the device.
d. Energize the circuit.

3. When power is connected, verify that the PSU LED is green.

What to Do Next

If the PSU LEDs do not turn green, refer to the either the 750 W AC Power Supply LEDs on page 61 topic or the 750 W DC Power Supply LEDs on page 61 topic for your device for troubleshooting information.

Connect Network Interface Cables

About This Task

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

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

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

Procedure

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

Activate and Verify the Switch

After you have installed the switch and connected network cables, complete these tasks to configure the software on the switch and prepare it for use.

Establish a Serial Connection

About This Task

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

Procedure

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

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

3. Access the device using a terminal emulator application (such as HyperTerminal in a Windows environment or Tip in a LINUX environment).
4. Disable any serial communication programs running on the workstation (such as synchronization programs).
5. Open a terminal emulator application (such as HyperTerminal on a PC, or TERM, Tip, or Kermit in a LINUX environment), and configure the application as follows:
   - In a Windows environment:

Parameter	Value
Bits per second	115200
Data bits	8
Parity	None

Parameter	Value
Stop bits	1
Flow control	None

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

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

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

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

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

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

```
SLX login:
```

6. Follow the steps to log into the switch and initial configuration steps in Configure the Switch for Use on page 50.

Configure the Switch for Use

About This Task

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

Procedure

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:
```

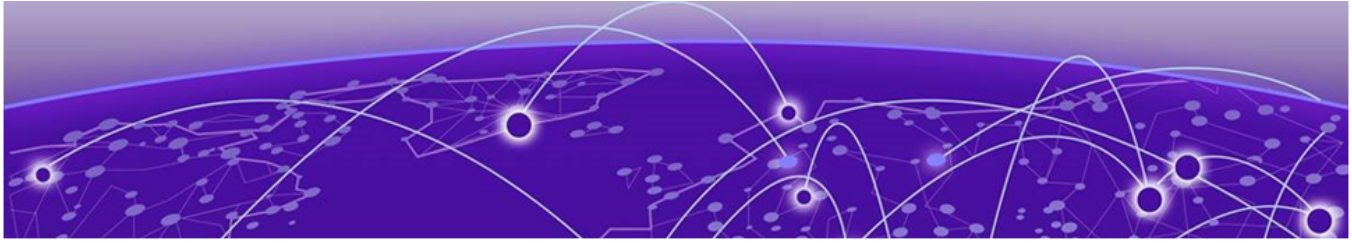
```
Enter new password:
Re-type new password:
passwd: all authentication tokens updated successfully
```

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 8520 Series device.

What to Do Next

The switch is ready for use.

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



Remove and Replace Components

You can replace internal power supplies and fan modules, as needed, while the device is operating ("hot swapping").

For each device, ensure that all installed power supplies and fan modules have the same the airflow direction: either front-to-back or back-to-front.

Follow the procedures in this section to remove and replace power supplies and fan modules, and to remove a device from a rack.

Replace Internal Power Supplies

About This Task

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

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

- If the power supply module has a **red** tab, the airflow is front-to-back.
- If the power supply module has a **blue** tab, the airflow is back-to-front.

To replace one or both AC internal power supplies in an 8520 Series switch, follow the steps in Install a 750 W Internal AC Power Supply on page 41.

To replace one or both DC internal power supplies in an 8520 Series switch, follow the steps in Install a 750 W Internal DC Power Supply on page 43.

Replace Fan Modules

About This Task

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

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

- If the fan module has a **red** tab, the airflow is front-to-back. Use a fan module labeled **Air Out**.
- If the fan module has a **blue** tab, the airflow is back-to-front. Use a fan module labeled **Air In**.

Note
The operating-system software cannot display the airflow direction.

Before You Begin

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.

To replace the fan module in a switch, do the following.

Procedure

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

   The fan module is held in place by spring clips. As you pull, the clips will disengage and the fan will stop.
2. Slide the fan module out of the switch and set it aside.
3. Verify that the airflow direction on the replacement fan module matches that of the installed fan modules.

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

   Fans with back-to-front airflow have blue tabs and are labeled **Air In**.
4. Carefully slide the replacement fan module into the switch.

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

Remove the Device from the Rack

About This Task

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

Before You Begin

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

- Four-Post Rack Mount on page 35
- Two-Post Rack Mount on page 38

Procedure

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.

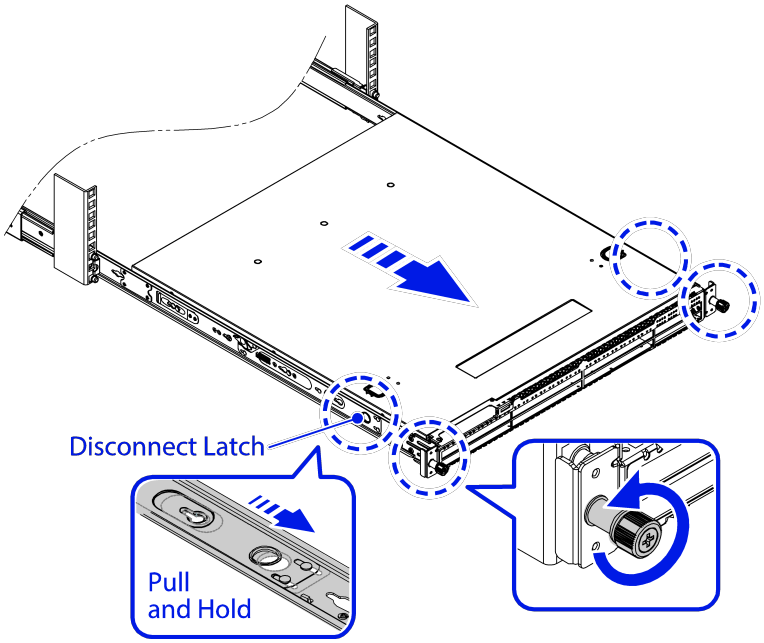


Figure 21: Disconnect latch for removal

   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.

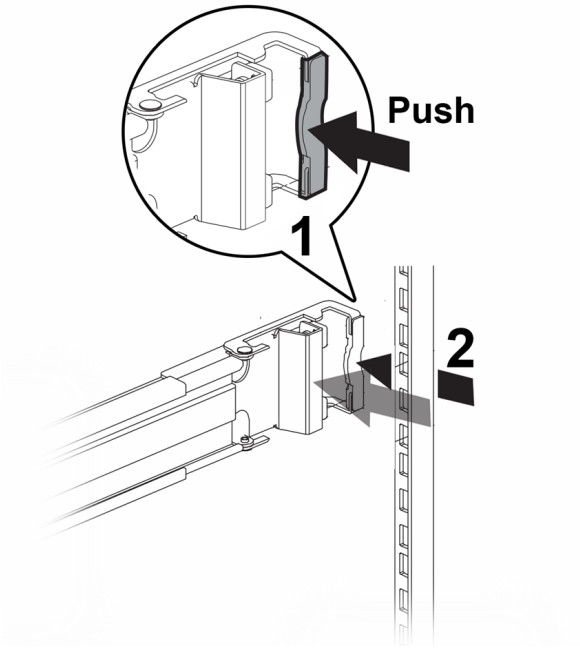


Figure 22: Removing the Slider Assembly: Rear Rack Post

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

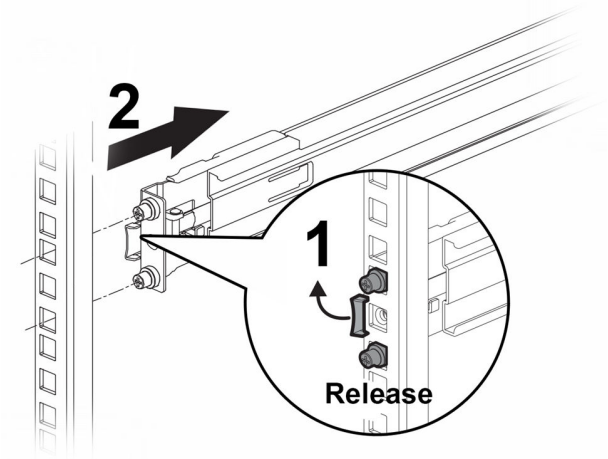


Figure 23: Removing the Slider Assembly: Front Rack Post

g. Repeat step 3.e on page 55 and step 3.f to remove the second slider assembly.

4. To remove a device from a two-post rack, do the following:

a. Carefully supporting the weight of the device, unscrew the mounting brackets from the rack.

b. 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.

Results

As a best practice, if you plan to use the device again later, store it with the mounting brackets attached.

Monitor the Switch

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

System Status LEDs

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

Table 9: System Status LEDs

LED	Color/State	Description
Power	Off	No power; some power rails are dropping below specification
	Green	Valid power. All monitored voltages are nominal.
System	Off	Boot failed.
	Green	Operationl.
	Blinking amber	Booting.
	Amber	Fault.
Fan Status	Off	No power.
	Green	Fan is operational.
	Amber	Fan failure.

Table 9: System Status LEDs (continued)

LED	Color/State	Description
PSU Status	Off	No power.
	Green	Power on. Main and Standby output enabled with no PSU warning or fault detected.
	Blinking amber	Warning. Power supply warning detected.
	Amber	Fault. Power supply fault.
Secure	Off	CeC1712 is booting up or fault. CeC1712 is performing the initial load (decrypt, validate, load) of its own code, prior to authenticating images. Or the CeC1712 was unable to decrypt, validate and load its own image.
	Blinking blue slowly (1 Hz)	CeC1712 is authenticating or updating images. CeC1712 is currently authenticating or copying golden image to primary.
	Blinking blue fast (4 Hz)	CeC1712 authentication failed. Neither primary nor golden image successfully validated.
	Blinking blue very slowly (0.25 Hz)	Bypass authentication. Bypassing authentication for test or development only.
	Blue	CeC1712 authentication complete. CeC1712 successfully authenticated the BIOS Flash-0 and BMC Flash-0 images.

RJ-45 Management Port LEDs

The 10/100/1000Base-T RJ-45 Management port includes two LEDs that are both amber and green. The LEDs are located on each side of the RJ-45 port. The LED on the right side is labeled Speed and the LED on the left side is labeled Link/Activity. The following table describes the meaning of the colors and states for the LEDs.

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

LED	Color/State	Description
Speed	Off	The port is operating at 10 Mbps.
	Green	The port is operating at 1 Gbps.
	Amber	The port is operating at 100 Mbps.

Table 10: 10/100/1000Base-T RJ-45 Management Port LEDs (continued)

LED	Color/State	Description
Link/Activity	Green	The port has link established. There is no data activity.
	Blinking green	The port has link established and there is data activity.
	Blinking slowly green	The port is disabled by the admin.
	Amber	Fault.

SFP+/SFP28 Port LEDs for the 8520-48Y

Each port has one LED to indicate link or activity. The following table describes the states for the LED.

Table 11: SFP+/SFP28 Port LEDs for the 8520-48Y

LED	State	Description
Link/Activity	Green	The port has link established. There is no data activity.
	Blinking green	The port has link established and there is data activity.
	Blinking slowly green	The port is disabled by the admin.
	Off	No link or fault.

1G/10G RJ45 Port LEDs for the 8520-48XT

Each port has one LED to indicate link or activity. The following table describes the states for the LED.

Table 12: 1G/10G RJ45 Port LEDs for the 8520-48XT

LED	State	Description
Link/Activity	Green	The port has link established. There is no data activity.
	Blinking green	The port has link established and there is data activity.
	Blinking slowly green	The port is disabled by the admin.
	Off	No link or fault.

QSFP28 Port LEDs

Each QSFP28 port has four green LEDs. The following table describes the states for the LEDs.

Table 13:

Port Configuration	LEDs	State	Description
100 Gb or 40 Gb	1st LED	Off	No link.
		On	Link is active, but there is no activity.
		Blinking	Link is active and there is activity.
		All LEDs blinking (on 1 second, off 1 second)	Switch is beaconing.
50 Gb	1st and 3rd LEDs	Off	No link.
		On	Link is active, but there is no activity.
		Blinking	Link is active and there is activity.
		All LEDs blinking (on 1 second, off 1 second)	Switch is beaconing.

Table 13: (continued)

Port Configuration	LEDs	State	Description
25 Gb or 10 Gb	All LEDs	Off	No link.
		On	Link is active, but there is no activity.
		Blinking	Link is active and there is activity.
		All LEDs blinking (on 1 second, off 1 second)	Switch is beaconing.

750 W AC Power Supply LEDs

The following table describes the meanings of the LEDs on the 750 W AC power supply (part number XN-ACPWR-750W-F or XN-ACPWR-750W-R).

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

Table 14: 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

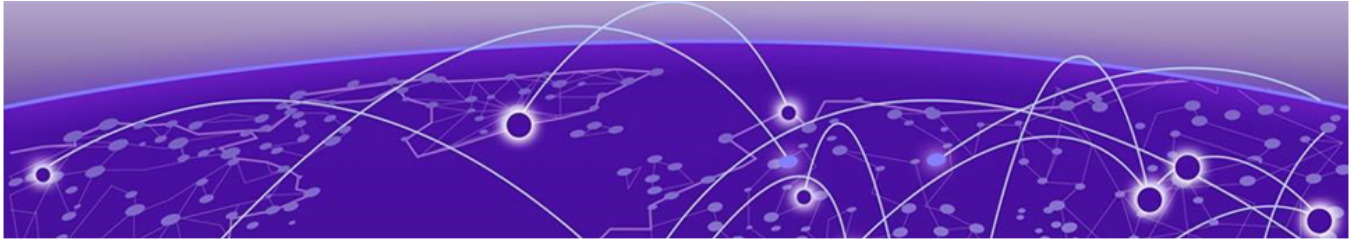
750 W DC Power Supply LEDs

The following table describes the meanings of the LEDs on the 750 W DC power supply (part number XN-DCPWR-750W-F or XN-DCPWR-750W-R).

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

Table 15: 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



Technical Specifications

The 8520 Series includes the following switch models:

- 8520-48Y-8C
- 8520-48Y-8C-AC-F
- 8520-48Y-8C-AC-R
- 8520-48Y-8C-DC-F
- 8520-48Y-8C-DC-R
- 8520-48XT-6C
- 8520-48XT-6C-AC-F
- 8520-48XT-6C-AC-R
- 8520-48XT-6C-DC-F
- 8520-48XT-6C-DC-R

Software Specifications

The following table includes software specifications for the 8520 Series switches.

Software Specifications	Description
Maximum MAC addresses	64,000
Maximum VLANs	4,096
Maximum ACLs (IPv4/IPv6/L2)	2,000
Maximum members in a standard LAG	64
Maximum number of MCT switches	2
Maximum number of Bridge Domains	2,048
Maximum IPv4 unicast routes	128,000
Maximum IPv6 unicast routes	10,000
Maximum IPv4 host routes	47,000
Maximum IPv6 host routes	33,000
Maximum jumbo frame size	9,126 bytes
QoS priority queues (per port)	8
IEEE Compliance	• IEEE 802.1D Spanning Tree Protocol • IEEE 802.1s Multiple Spanning Tree • IEEE 802.1w Rapid Reconfiguration of Spanning Tree Protocol • IEEE 802.3 Ethernet • IEEE 802.3ad Link Aggregation with LACP • IEEE 802.3ab 1000BASE-T • IEEE 802.3z 1000BASE-X • IEEE 802.3ba / 80 2.3bm 40 GBASE-X and 100 GBASE-X • IEEE 802.1Q VLAN Tagging • IEEE 802.1p Class of Service Prioritization and Tagging • IEEE 802.1v VLAN Classification by Protocol and Port • IEEE 802.1AB Link Layer Discovery Protocol (LLDP) • IEEE 802.3x Flow Control (Pause Frames) • IEEE 802.3ae 10 GBASE-X • IEEE 802.3 10 GBASE-T (up to 100 m using Cat6a cabling or better)

Weights and Physical Dimensions

The following tables include the unpackaged and packaged weights and dimensions of the 8520 Series switches.

Table 16: 8520 Series Unpackaged Dimensions

8520-48Y	Height: 4.3 cm (1.7 in) Width: 44.0 cm (17.3 in) Length: 54.15 cm (21.32 in)
8520-48XT	Height: 4.3 cm (1.7 in) Width: 44.0 cm (17.3 in) Length: 55.0 cm (21.69 in)
XN-FAN-001-F: Fan unit, front-to-back or XN-FAN-001-R: Fan Unit back-to-front	Height: 4.0 cm (1.57 in) Width: 4.0 cm (1.57 in) Length: 13.4 cm (5.28 in)
XN-4P-RKMT298 - Four-post rack mount kit (included with switch)	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)
XN-2P-RKMT299 - Two-post rack mount kit (separately orderable)	Height: 4.2 cm (1.65 in) Width: 2.4 cm (0.93 in) Length: 12.5 cm (4.92 in)

Table 17: 8520 Series Unpackaged Weight

8520-48Y switch with no PSUs	7.58 kg (16.71 lb)
8520-48Y switch with two AC PSUs (-F and -R models)	10.0 kg (22.13 lb)
8520-48Y switch with two DC PSUs (-F and -R models)	10.11 kg (22.29 lb)
8520-48XT switch with no PSUs	7.41 kg (16.34 lb)
8520-48XT switch with two AC PSUs (-F and -R models)	9.47 kg (20.88 lb)
8520-48XT switch with two DC PSUs (-F and -R models)	9.54 kg (21.0 lb)
Fan unit, front-to-back or back-to-front	0.14 kg (0.31 lb)
Four-post rack mount kit (included with switch)	2.63 kg (5.8 lb)
Two-post rack mount kit (separately orderable)	0.45 kg (0.99 lb)

Table 18: 8520 Series Packaged Dimensions

8520-48XT or 8520-48Y	Height: 19.0 cm (7.48 in) Width: 59.53 cm (23.43 in) Length: 89.0 cm (35.04 in)
Fan unit, front-to-back or back-to-front	Height: 6.3 cm (2.48 in) Width: 10.39 cm (4.09 in)

Table 18: 8520 Series Packaged Dimensions (continued)

	Length: 22.78 cm (8.97 in)
Four-post rack mount kit (included with switch)	Height: 7.0 cm (2.76 in) Width: 11.0 cm (4.33 in) Length: 84.0 cm (33.07 in)
Two-post rack mount kit (separately orderable)	Height: 6.3 cm (2.48 in) Width: 10.39 cm (4.09 in) Length: 21.79 cm (8.58 in)

Table 19: 8520 Series Packaged Weight

8520-48Y switch with no PSUs	14.78 kg (32.58 lb)
8520-48Y switch with two AC PSUs (-F and -R models)	17.24 kg (38.0 lb)
8520-48Y switch with two DC PSUs (-F and -R models)	17.31 kg (38.2 lb)
8520-48XT switch with no PSUs	13.65 kg (30.1 lb)
8520-48XT switch with two AC PSUs (-F and -R models)	15.71 kg (34.63 lb)
8520-48XT switch with two DC PSUs (-F and -R models)	15.78 kg (34.79 lb)
Fan unit, front-to-back or back-to-front	.28 kg (.62 lb)
Four-post rack mount kit (included with switch)	2.94 kg (6.48 lb)
Two-post rack mount kit (separately orderable)	.51 kg (1.12 lb)

Acoustic Specifications

The following table includes acoustic specifications of the 8520 Series switches.

Switch Model	Bystander Sound Pressure (at 25°C)	Declared Sound Power (at 25°C)
8520-48Y (Front-to-Back Airflow)	52.2 dB(A)	6.8 bels
8520-48Y (Back-to-Front Airflow)	50.5 dB(A)	6.7 bels
8520-48XT (Front-to-Back Airflow)	36.4 dB(A)	5.5 bels
8520-48XT (Back-to-Front Airflow)	45.0 dB(A)	6.3 bels

Fan Tray and Speed Variation

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 20: 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

Power Consumption

The following tables include power consumption information for the 8520 Series switches.

8520-48Y

The following tables provide AC and DC power consumption information for the 8520-48Y switch models.

Table 21: AC IN: 220V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	109	104	207	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	114	108	216	1. All ports up link 2. 85% fan duty
3	Typical Model	121	116	232	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	154	148	299	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

Table 22: AC IN: 110V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	112	106	209	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	118	111	223	1. All ports up link 2. 85% fan duty

Table 22: AC IN: 110V (continued)

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
3	Typical Model	126	119	239	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	158	152	302	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

Table 23: DC IN: 48V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	130	100	226	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	134	104	235	1. All ports up link 2. 85% fan duty
3	Typical Model	141	111	251	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	178	145	325	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

8520-48XT

The following tables provide AC and DC power consumption information for the 8520-48XT switch models.

Table 24: AC IN: 220V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	148.5	136	275.5	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	155.8	143	289	1. All ports up link 2. 85% fan duty
3	Typical Model	162.2	148	302.5	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	204.8	189	389.5	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

Table 25: AC IN: 110V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	149.8	138	250	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	156.8	145	262	1. All ports up link 2. 85% fan duty

Table 25: AC IN: 110V (continued)

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
3	Typical Model	164	151	275	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	205	191	354	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

Table 26: DC IN: 48V

Item	Test Mode	Consumption (W)			Notes
		Dual Power		Single Power	
		PSU1	PSU2		
1	Empty Model	161	125	280	1. No fiber transceivers inserted 2. No port up link 3. 85% fan duty
2	Standby Model	168	132	295	1. All ports up link 2. 85% fan duty
3	Typical Model	175	139	308	1. Snake test with 70% traffic load (1518 byte packet length) 2. 85% fan duty
4	Stress Model	221	184	399	1. Snake test with 100% traffic load (64 byte packet length) 2. 100% fan duty

Power and Heat Dissipation

The following table includes power and heat dissipation information for the 8520 Series switches.

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)
8520-48Y AC	553 BTU/ hr	167W	1600 BTU/ hr	469W
8520-48Y DC	553 BTU/ hr	167W	1600 BTU/ hr	469W
8520-48XT AC	642 BTU/ hr	194W	1225 BTU/ hr	359W
8520-48XT DC	642 BTU/ hr	194W	1225 BTU/ hr	359W

Mean Time Between Failures

The following table includes mean time between failures (MTBF) information for the 8520 Series switches.

Switch Model	Mean Time Between Failures
8520-48Y-8C-AC-F	471,550 hrs @ 25°C 178,775 @ 50°C
8520-48Y-8C-AC-R	520,479 hrs @ 25°C 255,358 @ 45°C
8520-48Y-8C-DC-F	471,560 hrs @ 25°C 178,776 @ 50°C
8520-48Y-8C-DC-R	520,491 hrs @ 25°C 255,361 @ 45°C
8520-48XT-6C-AC-F	439,148 hrs @ 25°C 187,306 @ 50°C
8520-48XT-6C-AC-R	421,453 hrs @ 25°C 176,924 @ 45°C
8520-48XT-6C-DC-F	439,156 hrs @ 25°C 187,308 @ 50°C
8520-48XT-6C-DC-R	421,461 hrs @ 25°C 176,926 @ 45°C

CPU, Memory Specifications

The following table includes cpu and memory specifications for the 8520 Series switches.

Specifications
2.2 GHz 8-core CPU
16 Gb DDR4 ECC memory
128 Gb SSD memory
32 MB buffer

Standards

The following tables list safety standards, EMI/EMC standards, telecom standards, and IEEE 802.3 media access standards.

Table 27: Safety Standards

	UL 62368-1 2nd Ed., 2014-12-01, Listed Device (US) UL 60950-1 2nd Ed., 2014-10-14, Listed Device (US) CAN/CSA 22.2 #62368-1-14 2nd Ed., Canada CAN/CSA 22.2 #60950-1-07 2nd Ed., Canada 2014-10 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 62368-1:2014/A11:2017 2014/35/EU Low Voltage Directive
International Safety of ITE	CNS 14336-1 AS/NZX 60950-1 (Australia /New Zealand) GB4943.1-2001 IEC/EN 60825-1:2007, IEC/EN 60825-2:2004+A1+A2 or later (Lasers Safety) IEC 62368-1:2014 (2ndEd.) IEC 60950-1:2005 (2nd Ed.) + Am 1:2009 + Am 2:2013 + National Difference

Table 28: EMI/EMC Standards

North America EMC for ITE	FCC 47 CFR part 15 subpart B Class A (USA) ICES-003 (Canada)
European EMC standards	EN 300 386 V2.1.1(2016-07) Class A EN 55032:2015/AC:2016-07 Class A EN 55024:2010/A1:2015 EN 55011:2009+A1:2010 (Group 1, Class A), EN 55035 EN 61000-6-2:2005+AC:2005 EN 61000-6-4:2007+A1:2011 EN 61000-3-2:2014 Class A EN 61000-3-3:2013 EN 61000-4-2:2009 EN 61000-4-3:2006+A1:2008+A2:2010 EN 61000-4-4:2012 EN 61000-4-5:2014 EN 61000-4-6:2014/AC:2015 EN 61000-4-8:2010 EN 61000-4-11:2004/A1:2017

Table 28: EMI/EMC Standards (continued)

International EMC certifications	IEC 61000-6-2:2016 ED 3.0 IEC 61000-6-4:2018 ED 3.0 IEC 61000-4-2:2008 ED 2.0 IEC 61000-4-3:2006+AMD1:2007+AMD2:2010 ED 3.2 IEC 61000-4-4:2012 ED 3.0 IEC 61000-4-5:2014+AMD1:2017+ ED 3.1 IEC 61000-4-6:2013+ ED 4.0 IEC 61000-4-8:2009+ ED 2.0 IEC 61000-4-11:2004+AMD1:2017+ ED 2.1 CISPER 32:2015 ED 2.0 Class A, CISPER 35:2016 ED 1.0 CISPER 24:2010+AMD1:2015 Class A CISPER 11:2009 ED 5.0 Group 1, Class A AS/NZS CISPER 32:2015 Class A GB/T9254-2008 Class A ANSI C63.4:2014
Country-specific	RCM (Australia) VCCI Class A (Japan) MSIP KCC (Korea) BSMI (Taiwan) ANATEL (Brazil) CCC mark (China) NRCS (South Africa) CSA, FCC (North America) EAC mark (Custom Union)

Table 29: Telecom Standards

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

Table 30: 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

Environmental Data

The following table provides environmental data information for the 8520 Series switches.

Environmental standards	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
Temperature range	• 8520-48Y and 8520-48XT, AC/DC, one fan failed, front-to-back: 0°C (32°F) to 50°C (122°F) at sea level; 0°C (32°F) to 40°C (104°F) up to 3000 m (10,000 ft) • 8520-48Y and 8520-48XT, AC/DC, one fan failed, back-to-front: 0°C (32°F) to 45°C (113°F) at sea level; 0°C (32°F) 40°C (104°F) to up to 3000 m (10,000 ft)
Other operating conditions	Humidity: 5% to 95% relative humidity, non-condensing Altitude: 0 to 3,000 meters (9,850 feet) Operational shock (half sine): 98 m/s^2 (10 G), 11 ms, 9 shocks Operational random vibration: 3 to 500 Hz at 1.5 G rms
Storage & transportation conditions (packaged)	Transportation temperature: -40°C to 70°C (-40°F to 158°F) Humidity: 5% to 95% relative humidity, non-condensing Packaged shock (half sine): 180 m/s^2 (18 G), 6 ms, 600 shocks Packaged sine vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G Packaged random vibration: 5 to 20 Hz at 1.0 ASD w/–3 dB/ oct. from 20 to 200 Hz 14 drops minimum on sides and corners at 42 in (<15 kg box)

750 W Power Supplies Technical Specifications

Four 750 W power supply units are available for use with the 8520 Series switches:

- 750W AC power supply - front-to-back airflow (part no. XN-ACPWR-750W-F)
- 750W AC power supply - back-to-front airflow (part no. XN-ACPWR-750W-R)
- 750W DC power supply - front-to-back airflow (part no. XN-DCPWR-750W-F)
- 750W DC power supply - back-to-front airflow (part no. XN-DCPWR-750W-R)

Table 31: 750 W Power Supplies: Unpackaged Dimensions

750 W power supply – AC (front-to-back or back-to-front airflow) 750 W power supply – DC (front-to-back or back-to-front airflow)	Height: 4.00 cm (1.57 in) Width: 8.00 cm (3.15 in) Depth: 23.7 cm (9.32 in)

Table 32: 750 W Power Supplies: Unpackaged Weight

750 W power supply – AC front-to-back or back-to-front airflow	0.81 kg (1.79 lb)
750 W power supply – DC front-to-back or back-to-front airflow	0.85 kg (1.86 lb)

Table 33: 750 W Power Supplies: Packaged Dimensions

750 W power supply – AC (front-to-back or back-to-front airflow) 750 W power supply – DC (front-to-back or back-to-front airflow)	Height: 6.3 cm (2.48 in) Width: 21.49 cm (8.46 in) Depth: 40.0 cm (15.75 in)

Table 34: 750 W Power Supplies: Packaged Weight

750 W power supply – AC front-to-back or back-to-front airflow	1.11 kg (2.45 lb)
750 W power supply – DC front-to-back or back-to-front airflow	1.15 kg (2.52 lb)

Table 35: Power Specifications (AC Power Supplies)

Voltage input range	100-140V~ and 200-240V ~
Nominal input ratings	100-140/200-240V ~ , 10/5.36A max., 50/60Hz
Nominal input current at full loads	5.36A at 100-140V ~ (low-line) 10A at 200-240V ~ (high-line)
Line frequency range	50 and 60 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 78

Table 35: Power Specifications (AC Power Supplies) (continued)

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

Table 36: Power Specifications (DC Power Supplies)

Nominal input	-48 to -60 VDC, 20.4 A
DC Voltage input range	-48 to -60 VDC
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 37: 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/s^2 (3 G)

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

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

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

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

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

Console Connector Pinouts

Table 38 describes the pinouts for a DB-9 console plug connector.

Table 38: 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 24 shows the pinouts for a 9-pin to 25-pin (RS-232) null-modem cable.

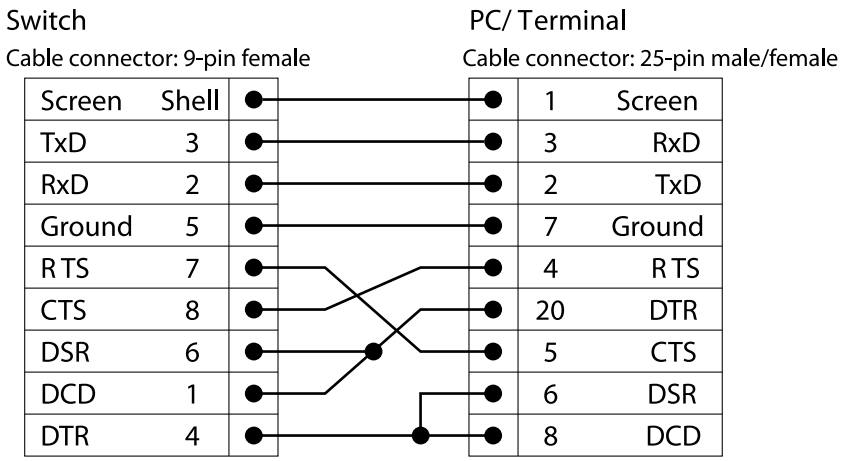


Figure 24: Null-Modem Cable Pinouts

Figure 25 shows the pinouts for a 9-pin to 9-pin (PC-AT) null-modem serial cable.

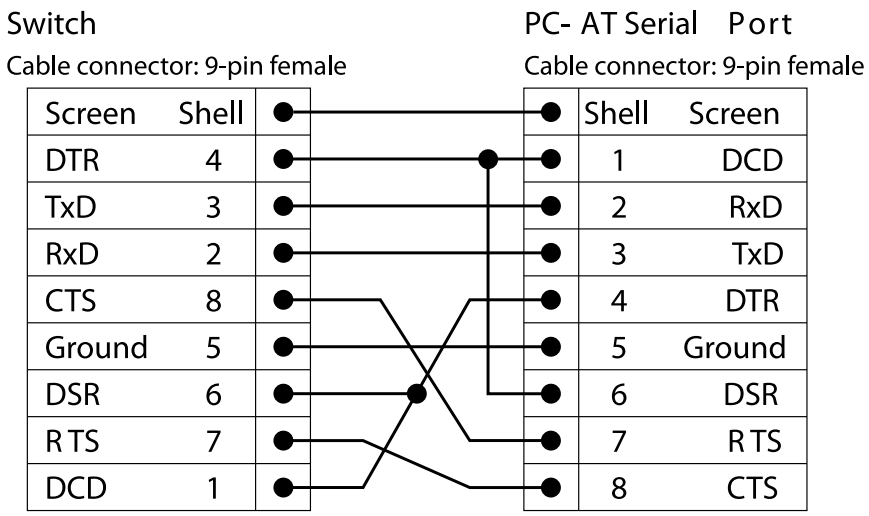


Figure 25: PC-AT Serial Null-modem Cable Pinouts

Table 39 shows the pinouts for the RJ45 console port on the ExtremeSwitching switches.

Table 39: 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
DSR (data set ready)	7	In
CTS (clear to send)	8	In

Table 40 shows the pinouts for an RJ45-to-DB-9 adapter.

Table 40: 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

Table 40: Pinouts for an RJ45 to DB-9 Adapter (continued)

Signal	RJ45 Pin	DB-9 Pin
DSR (data set ready)	7	4
RTS (request to send)	8	7

Safety Information

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

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

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

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 45°C (113°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 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.

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

Install Power Supply Units and Connect Power

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

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

When you install any power supply:

- Do not use excessive force when you insert a power supply into the bay.
- Do not attempt to open the power supply enclosure for any reason; the power supply does not contain user-serviceable parts. In the event of failure, return the defective power supply to Extreme Networks for repair or replacement.
- Do not put your hand into an open power supply bay when a power supply is not present.
- Before you work on equipment that is connected to power lines, remove all jewelry, including watches. Metal objects heat up when they are connected to power and ground and can cause serious burns or weld the metal object to the terminals.
- An electrical arc can occur when you connect or disconnect the power with power applied. This could cause an explosion in hazardous area installations. Be sure that power is removed from the device.
- When you install or replace equipment, always make the ground connection first and disconnect the ground connection last.

When you install DC power supplies or connect DC power:

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

Note

Because building codes vary worldwide, Extreme Networks strongly recommends that you 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

Extreme Networks does not include power input cords in the product box.

A power input cord is included in the product packaging for your switch .If additional cords are needed, you can obtain them as follows.

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 it is recommended that a transformer be used to step down the voltage to < 240 VAC from phase-phase, or that you make a connection to a (P+N+PE) power distribution where voltages do not exceed 240 VAC.

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

Battery Notice

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

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

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

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

Battery Warning - Taiwan

About This Task

警告

如果更換不正確之電池型式會有爆炸的風險,

請依製造商說明書處理用過之電池。

Regulatory Information

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 CQC Warning

警告使用者:

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对干扰采取切实可行的措施。

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	“ᠬᠦᠷᠢᠮ᠎ᠠ᠋ᠯᠤᠰ᠎ᠤᠨ ᠭᠠᠵᠠᠷ᠎ᠳᠤ᠌ ᠬᠡᠷᠡᠭᠯᠡᠬᠦ ᠦᠶ᠎ᠡ᠋ᠴᠡ ᠪᠤᠰᠤᠳ ᠬᠤᠷᠢᠶᠠᠨ᠎ᠤ ᠨᠥᠬᠴᠥᠯ ᠳᠤᠤᠷᠠᠬᠢ ᠪᠠᠢᠳᠠᠯ᠎ᠳ᠋ᠠ 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	“ᠭᠠᠳᠠᠷᠭᠤ ᠳᠡᠭ᠎ᠡᠷ᠎ᠡ ᠬᠡᠪ᠎ᠢᠨ 2000 ᠮᠧᠲᠷ ᠤᠨ ᠥᠨᠳᠥᠷ ᠳᠤᠤᠷᠠᠬᠢ ᠪᠠᠢᠳᠠᠯ᠎ᠳ᠋ᠠ 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 적
합성평가를 받은 기기로서 가정용 환경에서 사
용하는 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情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

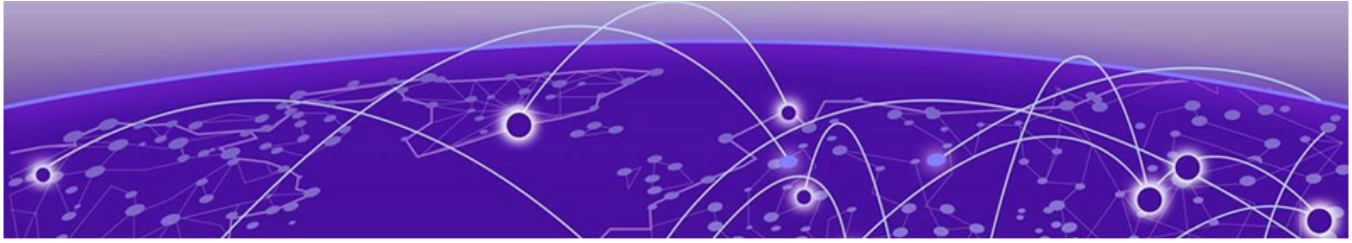
VCCI-A

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.



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