

ExtremeAccess Series: Hardware Installation Guide



Copyright © 2019 Extreme Networks, Inc. All rights reserved.

Legal Notice

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

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

Trademarks

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

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

For additional information on Extreme Networks trademarks, please see:

www.extremenetworks.com/company/legal/trademarks

Open Source Declarations

Some software files have been licensed under certain open source or third-party licenses. End-user license agreements and open source declarations can be found at:

www.extremenetworks.com/support/policies/software-licensing

Table of Contents

Preface.....	4
Audience.....	4
Conventions.....	4
Documentation and Training.....	5
Getting Help.....	6
Providing Feedback to Us.....	6
Chapter 1: Overview of the XA1400 Series.....	8
XA1400 Series Switch Features.....	8
VSP License Options.....	9
Chapter 2: Power Supply for Use with Your Switch.....	10
12V 60W DC Power Supply	10
Chapter 3: Preparing to Install.....	11
Operating Environment Requirements.....	12
Rack Specifications and Recommendations.....	14
Evaluating and Meeting Cable Requirements.....	16
Meeting Power Requirements.....	23
Following Applicable Industry Standards.....	25
Chapter 4: Installing Your Switch.....	26
Safety Considerations for Installing Power Supplies.....	26
What You Will Need for the Installation.....	27
Attaching the Switch to a Two-Post Rack.....	28
Installing Optional Components.....	34
Connecting Network Interface Cables.....	35
Chapter 5: Activating and Verifying the Switch.....	36
Connecting the Switch to a Management Console.....	36
Configuring the Switch for Use.....	36
Chapter 6: Monitoring the Switch.....	38
XA1400 Switch LEDs.....	38
XA 12V 60W DC PSU LEDs.....	39
Appendix A: Technical Specifications.....	41
XA1400 Series Technical Specifications.....	41
Appendix B: Safety and Regulatory Information.....	45
Considerations Before Installing.....	45
General Safety Precautions.....	46
Maintenance Safety.....	46
Cable Routing for LAN Systems.....	47
Installing Power Supply Units and Connecting Power.....	48
Selecting Power Supply Cords.....	49
Battery Notice.....	49
Regulatory Notices.....	49
Index.....	54

Preface

This guide provides the instructions and supporting information needed to install Extreme Networks® XA1400 Series switches:

The guide includes information about site preparation, installation, maintenance, and the switches' functionality.

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 VOSS software documentation for information about configuring XA1400 Series hardware.



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

This section discusses the conventions used in this guide.

Text Conventions

The following tables list text conventions that are used throughout this guide.

Table 1: Notice Icons




Icon	Notice Type	Alerts you to...
	General Notice	Helpful tips and notices for using the product.
	Note	Important features or instructions.
	Caution	Risk of personal injury, system damage, or loss of data.

Table 1: Notice Icons (continued)


Icon	Notice Type	Alerts you to...
	Warning	Risk of severe personal injury.
<i>New!</i>	New Content	Displayed next to new content. This is searchable text within the PDF.

Table 2: Text Conventions

Convention	Description
Screen displays	This typeface indicates command syntax, or represents information as it appears 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 with brackets, such as [Return] or [Esc] . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press [Ctrl]+[Alt]+[Del]
<i>Words in italicized type</i>	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.

Terminology

When features, functionality, or operation is specific to a switch 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 switch.

Documentation and Training

To find Extreme Networks product guides, visit our documentation pages at:

Current Product Documentation	www.extremenetworks.com/documentation/
Archived Documentation (for earlier versions and legacy products)	www.extremenetworks.com/support/documentation-archives/
Release Notes	www.extremenetworks.com/support/release-notes
Hardware/Software Compatibility Matrices	https://www.extremenetworks.com/support/compatibility-matrices/
White papers, data sheets, case studies, and other product resources	https://www.extremenetworks.com/resources/

Training

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

Getting Help

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: 1-800-998-2408 (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 and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) 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

Subscribing to Service Notifications

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

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



Note

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

- 4 Click **Submit**.

Providing Feedback to Us

Quality is our first concern at Extreme Networks, and we have made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you! We welcome all feedback but especially want to know about:

- Content errors or confusing or conflicting information.
- Ideas for improvements to our documentation so you can find the information you need faster.
- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team, you can do so in two ways:

- Use our short online feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at documentation@extremenetworks.com.

Please 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.



1 Overview of the XA1400 Series

XA1400 Series Switch Features VSP License Options

The ExtremeAccess XA1400 Series is a small form factor networking switch designed for small WAN edge deployments that offers a versatile and efficient Campus Fabric Extension-to-branch solution for Main or Hub sites. The XA1400 Series Automated Campus Remote Office Appliance runs the VOSS operating platform.

XA1400 Series hardware includes the following base models:

Table 3: XA1400 Models

Part no.	Model
XA1440	XA1440 - switch with one fan and one 12V 60W DC external power adapter
XA1480	XA1480 - switch with one fan and one 12V 60W DC external power adapter

Power for the device is supplied through an external 12V 60W DC power supply plugged into an AC source. Plug the supply's input jack into the DC power adapter input.

An RJ45 console port on the rear panel allows you to connect a terminal and perform local management. An Ethernet management port can be used to connect the system to a parallel 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 port supports 10/100/1000 Mbps speeds.

A Micro USB console port can be used for network management or for attaching a removable memory module. Two full-size USB ports are also available.

XA1400 Series Switch Features

The front panel of XA1440 and XA1480 switches include:

- LEDs to indicate port status and switch operating conditions. For a description of the LEDs and their operation, see [XA1400 Switch LEDs](#) on page 38.

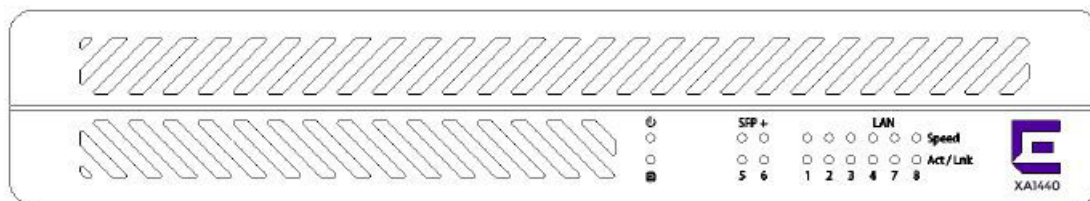


Figure 1: XA1400 Series Series Switch - Front Panel

The rear panel of XA1400 Series switches include:

- Power button
- 6 RJ45 10/100/1000BASE-T Ethernet ports.
- 2 10-gigabit Ethernet ports capable of supporting active fiber SFP+. For information about SFP+ optical modules, see the *Extreme Networks Pluggable Transceivers Installation Guide*.
- RJ45 console port used to connect a terminal and perform local management.
- 2 USB ports for access to external storage.
- 1 MicroUSB console port used to connect a terminal and perform local management..

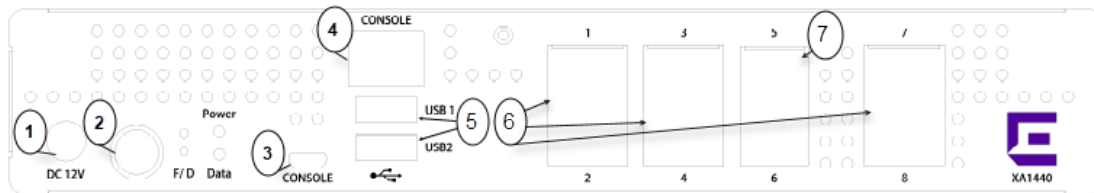


Figure 2: XA1400 Series Series Switch - Rear Panel

1 = DC power adapter input	3 = Micro USB console port	5 = USB Type A ports	7 = 10G SFP+ Ethernet ports
2 = Power button	4 = RJ45 Console port	6 = 10/100/1000BASE-T Ethernet ports	

VSP License Options

For information about licensing options for VOSS, see *Administering VSP Operating System Software*.

2 Power Supply for Use with Your Switch

12V 60W DC Power Supply

Each XA1400 Series switch runs with an external 12V 60W DC power adapter.

The external DC power supply unit can be plugged into an AC power source.

For more information, see the following topic:

- [12V 60W DC Power Supply](#) on page 10

12V 60W DC Power Supply

XA1400 Series can be powered by an external 12V 60W DC power supply plugged into an AC source. Plug the supply's input jack into the DC power adapter input.

LEDs on the 12V 60W DC power adapter provide information on the unit's operational status. See [XA 12V 60W DC PSU LEDs](#) on page 39

3 Preparing to Install

Operating Environment Requirements
Rack Specifications and Recommendations
Evaluating and Meeting Cable Requirements
Meeting Power Requirements
Following Applicable Industry Standards

Before you install your Extreme Networks equipment, careful planning can help ensure that it is used effectively and help prepare you for future growth.

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 and Regulatory Information](#) on page 45.

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

This chapter covers the following aspects of site preparation:

- 1 [Operating Environment Requirements](#) on page 12

Verify that your site meets all environmental and safety requirements.

- 2 [Rack Specifications and Recommendations](#) on page 14

Ensure that mounting racks are safe and appropriate for the equipment.

- 3 [Evaluating and Meeting Cable Requirements](#) on page 16

Understand the different cabling options and select the ones that best address your needs.

- 4 [Meeting Power Requirements](#) on page 23

Ensure that power supplies are safe and appropriate for the equipment.

For details about the equipment's power requirements, see the "Technical Specifications" section.

- 5 [Following Applicable Industry Standards](#) on page 25

Understand the applicable standards and ensure that they are being followed.

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.

Meeting 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 4](#) are authorities on electrical codes.

Table 4: 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

Table 4: Authorities on Electrical Codes (continued)

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

Setting 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 14 for more information.
- Use appropriate AC or DC power, power distribution, and grounding for your specific installation.
- Use a vinyl floor covering in your wiring closet. (Concrete floors accumulate dust, and carpets can cause static electricity.)
- Prevent unauthorized access to wiring closets by providing door locks. Install the equipment in a secured, enclosed, and restricted access location, ensuring that only qualified service personnel have access to the equipment.
- Provide adequate overhead lighting for easy maintenance.
- Be sure that each wiring closet has a suitable ground. All equipment racks and equipment installed in the closet should be grounded.
- Be sure that all system environmental requirements are met, such as ambient temperature and humidity.



Note

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

Controlling the Temperature

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

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

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

- Ensure that the ventilation in the wiring closet is adequate to maintain a temperature no higher than 40°C (104°F). (Some configurations support higher operating temperatures. See Environmental Data in "Technical Specifications" for details.)
- Install a reliable air conditioning and ventilation system.
- Keep the ventilation in the wiring closet running during non-business hours; otherwise, the equipment can overheat.
- Maintain a storage temperature between -40°C (-40°F) and 70°C (158°F).

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

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

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

Controlling 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 10% and 90% relative humidity (non-condensing) for short intervals.

Protecting Your System from ESD (Electrostatic Discharge)

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

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

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

Rack Specifications and Recommendations

Racks should conform to conventional standards.

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

Mechanical Recommendations for the Rack

Use equipment racks that meet the following mechanical recommendations:

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

Grounding the Rack

The rack must be properly grounded.

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

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

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

AC-powered switches do not need separate chassis grounding.

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



Note

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

Providing Adequate Space for the Rack

Provide enough space in front of and behind the equipment, so that you can service it easily and so that airflow is not impeded.

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



Note

The equipment does not have a switch for turning power 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.

Securing the Rack

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

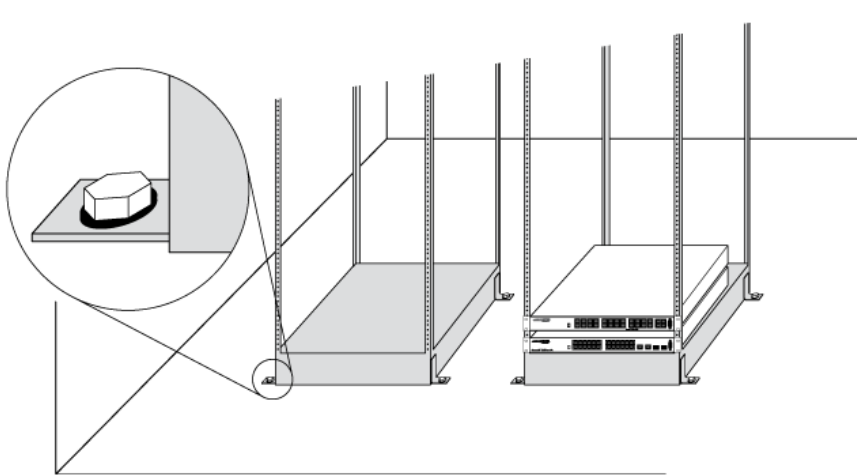


Figure 3: Properly Secured Rack

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

Evaluating and Meeting Cable Requirements

Use professional consultants for site planning and cabling.

Extreme Networks recommends using the Building Industry Consulting Service International (BICSI) Registered Communications Distribution Designer (RCDD), which is globally recognized as a standard in site planning and cabling.

For information, visit www.bicsi.org.

Labeling Cables and Keeping Accurate Records

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

Keeping accurate records helps you to:

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

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

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

Installing Cable

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

- Examine cable for cuts, bends, and nicks.
- Support cable using a cable manager that is mounted above connectors to avoid unnecessary weight on the cable bundles.
- Use cable managers to route cable bundles to the left and right of the network equipment to maximize accessibility to the connectors.
- Provide enough slack, approximately 5 to 7.5 cm (2 to 3 in), to provide proper strain relief as shown in [Figure 4](#) on page 18.
- Bundle cable using hook-and-loop straps to avoid injuring cables.
- If you build your own cable, be sure that connectors are properly crimped.
- When installing a patch panel using twisted pair wiring, untwist no more than 2.5 cm (1 in) of the cable to avoid radio frequency (RF) interference.
- Discharge the RJ45 Ethernet cable before plugging it into a port on the switch.



Caution

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

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

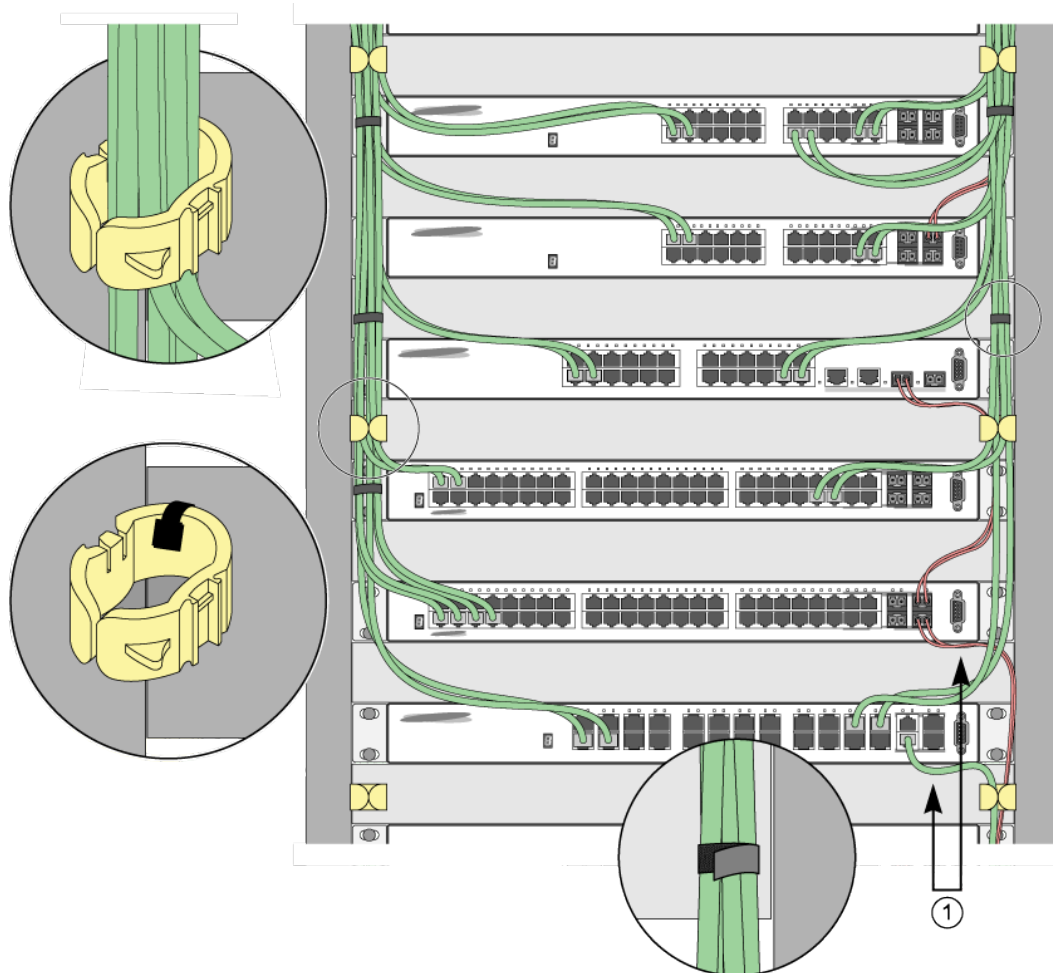


Figure 4: Properly Installed and Bundled Cable

1 = Ensure adequate slack and bend radius

Handling 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. Extreme Networks recommends

that the bend radius for fiber optic cable equal at least 5 cm (2 in) for each 90-degree turn as shown in [Figure 5](#).



Note

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

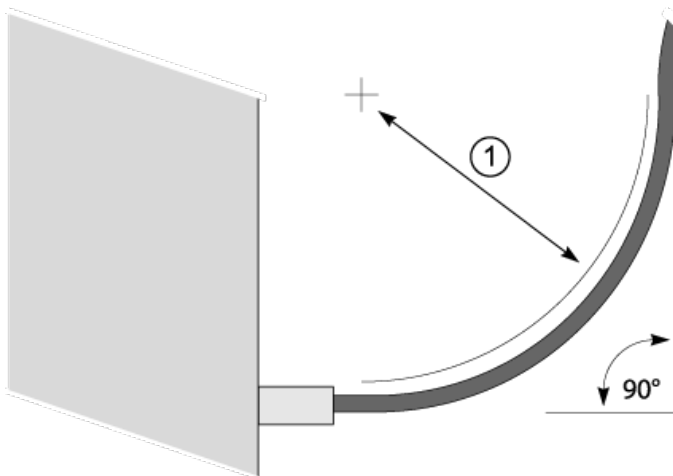


Figure 5: Bend Radius for Fiber Optic Cable

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

Cable Distances and Types

[Table 5](#) on page 19 shows one example of cable media types and maximum distances that support reliable transmission in accordance with international standards (except where noted). Refer to [Extreme Networks Pluggable Transceivers Installation Guide](#) for descriptions of optics and cables, as well as a complete list of supported cable lengths.

Refer to [Extreme Hardware/Software Compatibility and Recommendation Matrices](#) for a list of the cable types that are compatible with your equipment.

Table 5: 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 5: Cable Distances and Types (continued)

Standard	Media Type	MHz•km Rating	Maximum Distance (Meters)
1000BASE-LX (1300nm optical window)	50/125 μ m multimode fiber	400	550
	50/125 μ m multimode fiber	500	550
	62.5/125 μ m multimode fiber	500	550
	10/125 μ m single-mode fiber	–	5,000
	10/125 μ m single-mode fiber	–	10,000
1000BASE-ZX (1550nm optical window)	10/125 μ m single-mode fiber	–	80,000
100BASE-LX100 (1550nm optical window)	10/125 μ m single-mode fiber	–	100,000
1000BASE-BX10 (1490nm optical window) (1310nm optical window)	10/125 μ m single-mode fiber	–	10,000
1000BASE-LX70 (1550nm optical window)	10/125 μ m 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-SR SFP+ (850nm optical window)	62.5 mm multimode fiber	160	26
	62.5 mm multimode fiber (OM1)	200	33
	50 mm multimode fiber	400	66
	50 mm multimode fiber (OM2)	500	82
	50 mm multimode fiber (OM3)	2000	300
10GBASE-LR SFP+ (1310nm optical window)	10/125 μ m single-mode fiber	–	10,000
10GBASE-ER SFP+ (1550nm optical window)	10/125 μ m single-mode fiber	–	40,000
40GBASE-SR4 QSFP+ (850nm optical window)	50 mm multimode fiber (OM3)	–	100
	50 mm 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

Table 6 and Table 7 on page 21 list direct-attach cables available from Extreme Networks.

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

Table 6: Extreme Networks 100Gb Direct-Attach Cables

Cable Type	Part Number	Length
QSFP28-QSFP28 Direct attach passive copper cable	10411 or AA1405029-E6	1 meter
	10413 or AA1405031-E6	3 meters
	10414 or AA1405032-E6	5 meters
QSFP28-4xSFP28 (4x25Gb) Direct attach passive copper breakout	10421	1 meter
	10423	3 meters
	10424	5 meters
QSFP28-4xSFP28 (4x25Gb) Active optical breakout cable	10444	20 meters

Table 7: Extreme Networks 40Gb Direct-Attach Cables

Cable Type	Part Number	Length
QSFP+ to QSFP+ Direct attach cable	AA1404037-E6	0.5 meter
	AA1404029-E6	1 meter
	AA1404030-E6	2 meters
	AA1404031-E6	3 meters
	AA1404032-E6	5 meters
QSFP+ to QSFP+ Active optical cable	AA1404028-E6	10 meters active optical
QSFP+ to 4xSFP+ Breakout cable	AA1404033-E6	1 meter
	AA1404035-E6	3 meters
	AA1404036-E6	5 meters
	AA1404041-E6	10 meters active optical

SFP/SFP+ Cable Distances and Types

Table 8 on page 22 shows one example of cable media types and maximum distances that support reliable transmission in accordance with international standards (except where noted). Refer to *Extreme Networks Pluggable Transceivers Installation Guide* for descriptions of optics and cables, as well as a complete list of supported cable lengths.

Refer to *Extreme Hardware/Software Compatibility and Recommendation Matrices* for a list of the cable types that are compatible with your equipment.

Table 8: SFP/SFP+ Cable Distances and Types

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
10/100/1000BASE-T SFP	(100 Mbps link) Category 5 and higher UTP cable	–	150
	(10 Mbps link) Category 5 and higher UTP cable	–	250

Using RJ45 Connector Jackets

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

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

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

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

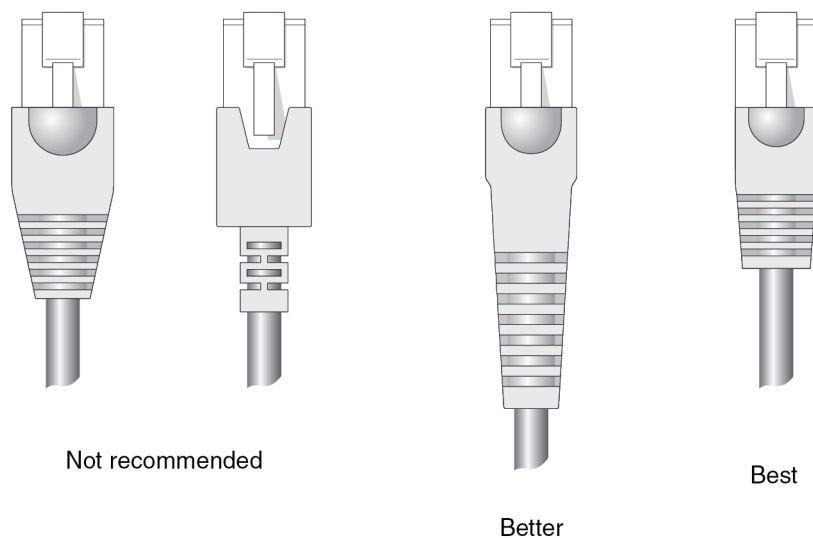


Figure 6: RJ45 Connector Jacket Types

² 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.

Preventing 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.

Meeting Power Requirements

Observe the following requirements and precautions for powering your hardware.

Power Supply Requirements

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

- Place the equipment in an area that accommodates the power consumption and component heat dissipation specifications.
- Be sure that your power supply meets the site DC power or AC power requirements of the network equipment.
- When you connect power to installed equipment, do not make this connection through an extension cord or power strip.
- If your switch includes more than one power supply, connect each power supply to a different, independent power source.

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

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

For detailed power specifications for your equipment, see "Technical Specifications."

Requirements for Power Cords

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.

Selecting 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 [Providing a Suitable UPS Transition Time](#) on page 25.)



Note

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

Calculating Volt-Amperage Requirements

To determine the size of UPS that you need:

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

Providing a Suitable UPS Transition Time

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

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

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

Following 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.

4 Installing Your Switch

Safety Considerations for Installing Power Supplies
What You Will Need for the Installation
Attaching the Switch to a Two-Post Rack
Installing Optional Components
Connecting Network Interface Cables

Before you attempt to install or remove an Extreme Networks switch, read the precautions in [Safety Considerations for Installing Power Supplies](#) on page 26.

MicroVSP switches do not fit into standard 19-inch equipment racks. In order to mount a MicroVSP switch to a standard 19-inch equipment rack, a two-post kit must be separately ordered.

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 27.
- 2 Install the switch in the rack.
See [Attaching the Switch to a Two-Post Rack](#) on page 28.
- 3 Install optional components: optical transceivers and cables.
See the instructions in [Installing Optional Components](#) on page 34.
- 4 Connect network interface cables.
See [Connecting Network Interface Cables](#) on page 35.
- 5 Perform initial network connection and configuration.
See [Activating and Verifying the Switch](#) on page 36.

Safety Considerations for Installing Power Supplies

Only trained service personnel should perform service to Extreme Networks switches and their components.

Trained service 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.

**Warning**

Extreme Networks AC power supplies do not have switches for turning the unit on and off. To disconnect the power to an Extreme Networks AC power supply, remove the wall plug from the electrical outlet. Make sure that this connection is easily accessible.

**Warning**

When the power supply is outside the chassis (not installed), do not plug the power supply into an electrical outlet. Plugging an uninstalled AC power supply into an electrical outlet exposes you to a hazardous energy and is a potential fire hazard.

**Caution**

Before installing or removing any components of the system, or before carrying out any maintenance procedures, read the safety information provided in [Safety and Regulatory Information](#) on page 45. Not following these precautions can result in equipment damage or shock.

**Caution**

Be sure that proper ESD controls are in use before switch maintenance is performed. This includes but is not limited to wrist straps that are grounded to the switch chassis and earth grounds.

**Note**

See "Technical Specifications" for additional information regarding regulatory compliance certifications.

What You Will Need for the Installation

Ensure that you have followed the guidance in [Preparing to Install](#) on page 11, 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. Allow 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 screwdriver to attach bracket screws that are provided with the switch. We recommend using a magnetic screwdriver.
- ESD-preventive wrist strap for installing optional ports at the back of the switch.

Attaching the Switch to a Two-Post Rack

You can attach your 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 your switch. However, they can be ordered separately using part number XN-2P-RMKIT-XA.

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

- 1 Remove all contents of the rack-mount kit.

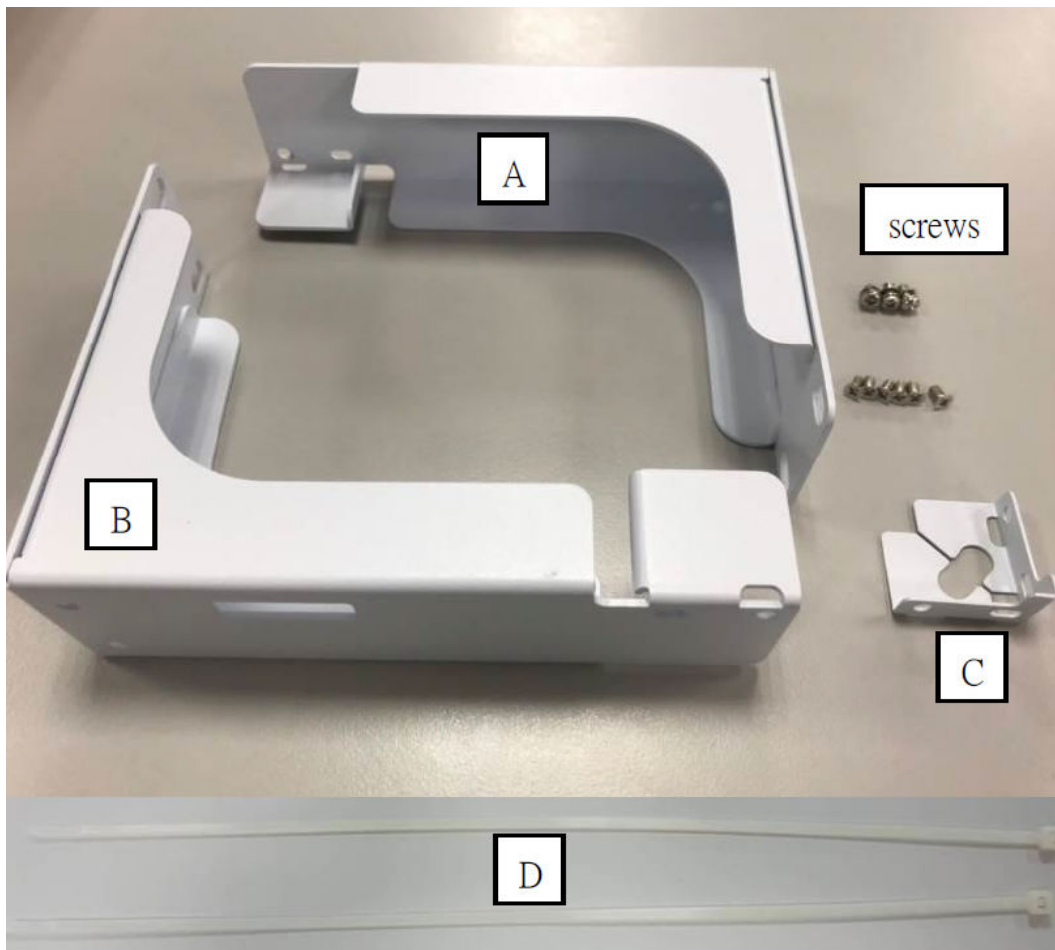


Figure 7: Rack-Mount Kit Components

- 2 With the front of the XA1400 Series switch facing you, Align the A bracket to the left side of the switch.

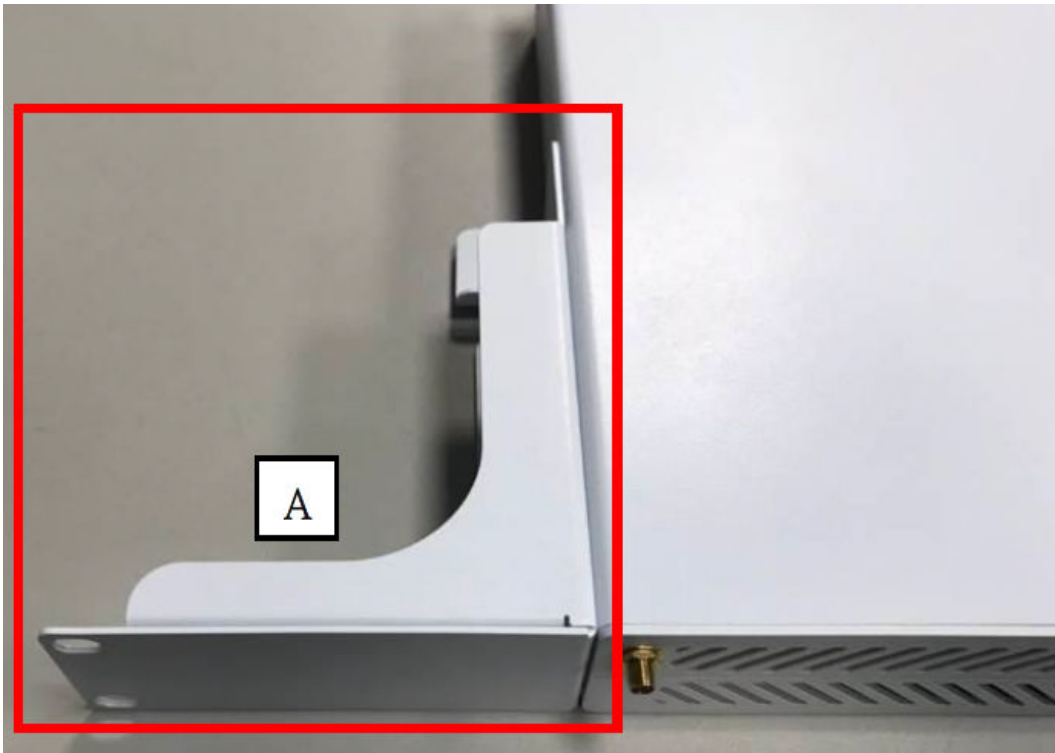


Figure 8: Align Left (A) Bracket

- a Secure the A bracket using the 3 (b) screws and 1 (a) screw.

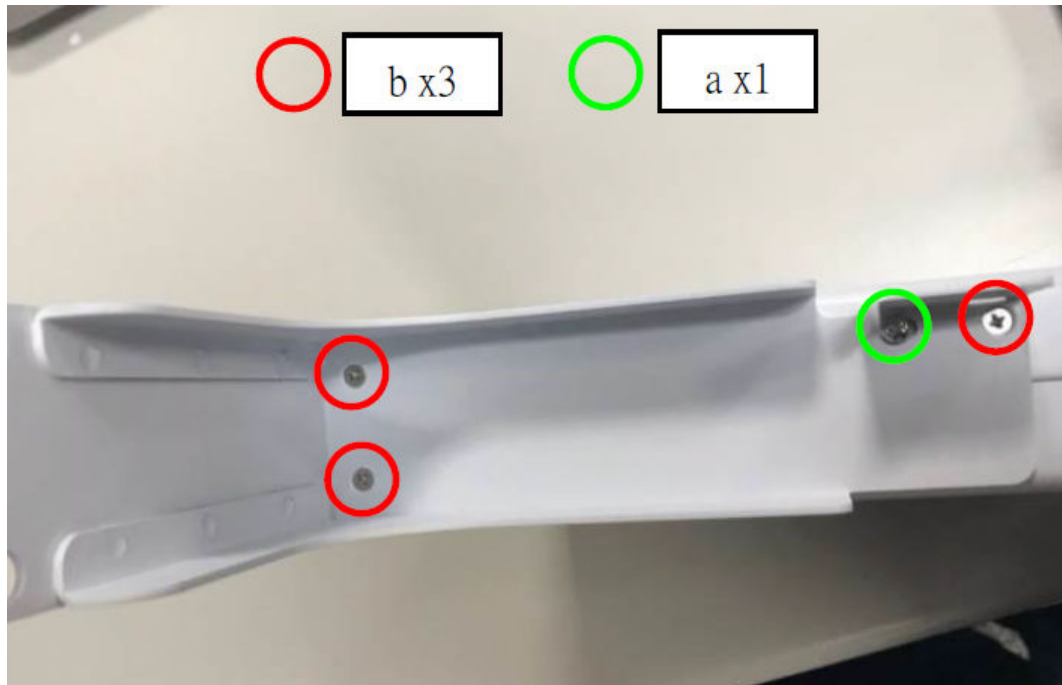


Figure 9: Secure Left (A) Bracket

- 3 With the front of the XA1400 Series switch facing you, align the B bracket to the right side of the switch.

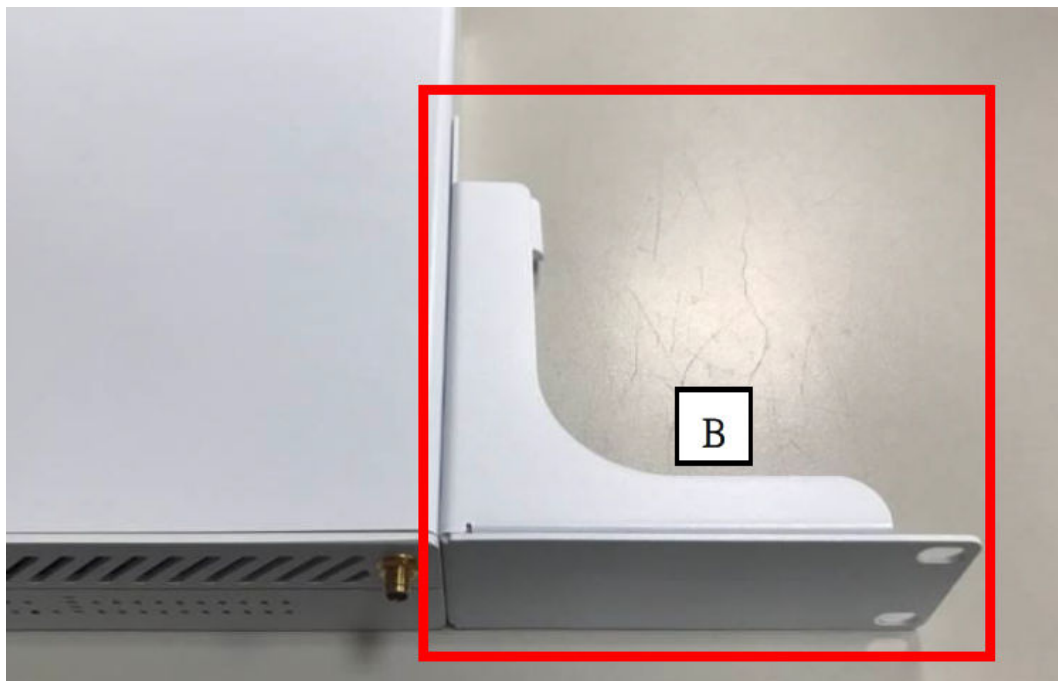


Figure 10: Mount Right (B) Bracket

- a Secure the B bracket using 3 (b) screws.

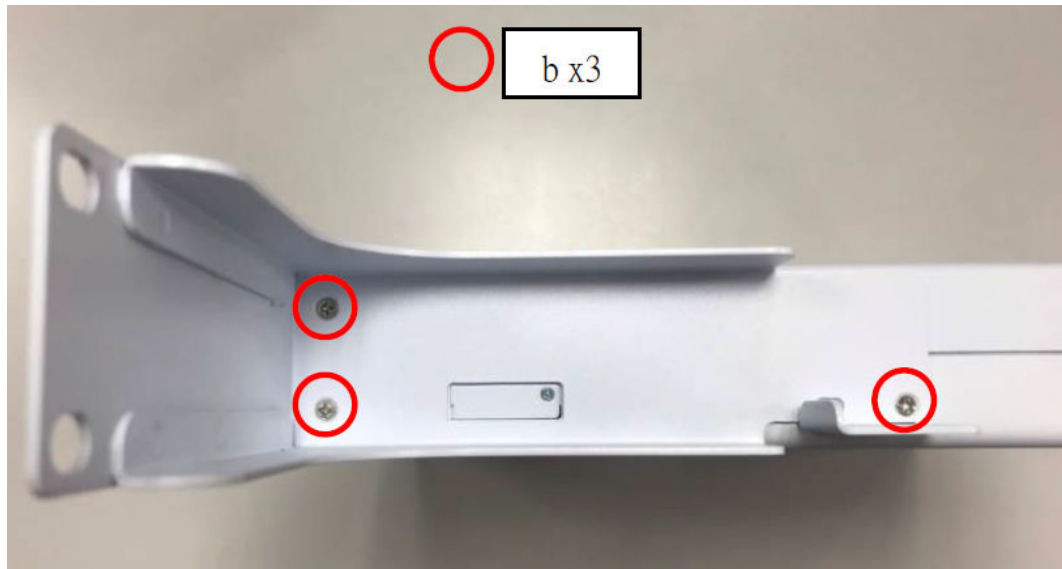


Figure 11: Secure Right (B) Bracket

- 4 With the rear of the XA1400 Series switch facing you, align the C bracket to the left side of the switch.

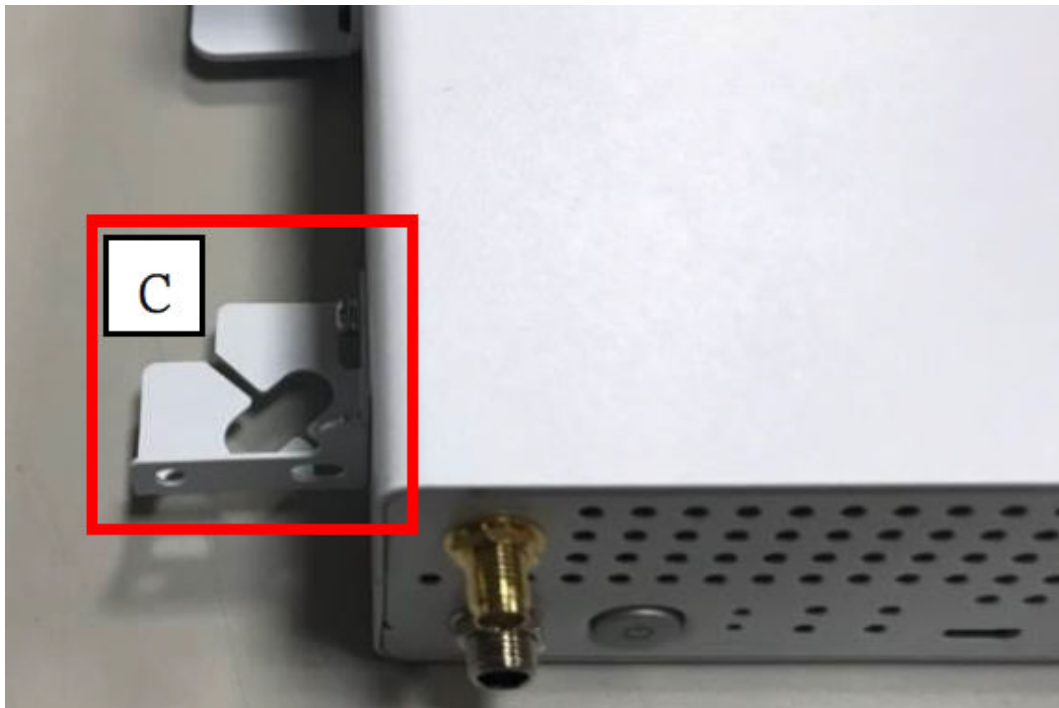


Figure 12: Align C Bracket

- a Secure the C bracket using 2 (a) screws.

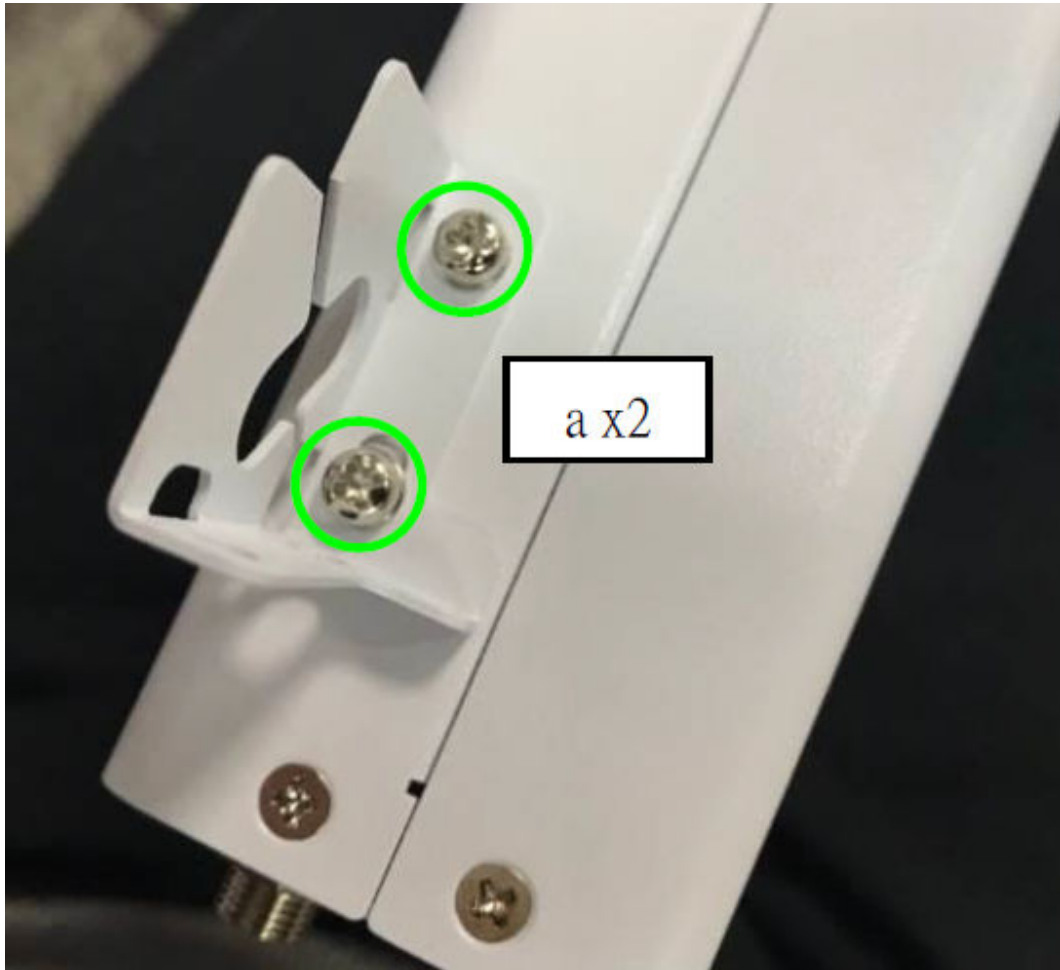


Figure 13: Secure C Bracket

- 5 Insert the zip ties (D) into the slots of the B and C brackets.

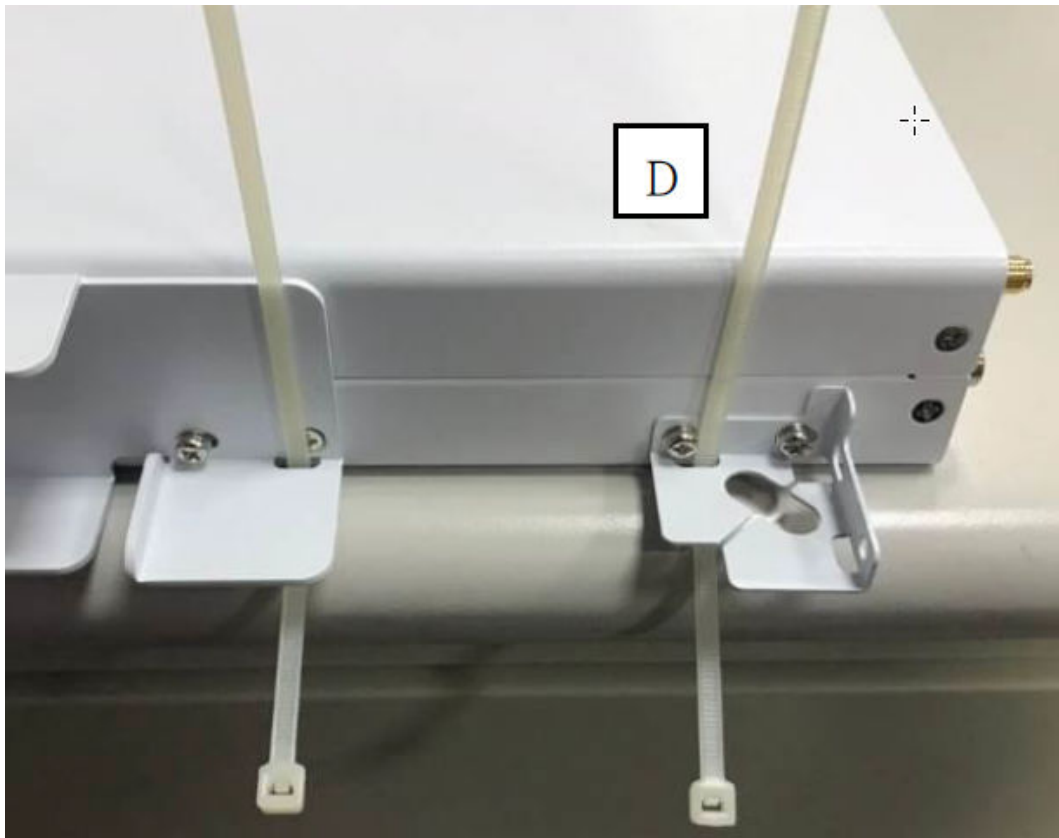


Figure 14: Insert Zip Ties

- 6 Secure the external power supply and close the zip ties appropriately.



Figure 15: Secure External Power Supply

- 7 Final assembly should appear as follows:



Figure 16: Assembled MicroVSP in Two-Post Mount

The MicroVSP can now be installed in a standard 19" rack.

Installing Optional Components

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

VSP 7400 Series 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 VSP 7400 Series switches, see the [Extreme Hardware/Software Compatibility and Recommendation Matrices](#).

Pluggable Transceiver Modules

Extreme Networks offers several optical transceiver modules for transmitting and receiving data over optical fiber rather than through electrical wires. Install these modules using the instructions in [Extreme Networks Pluggable Transceivers Installation Guide](#).

Optical Cables

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

To install optical cables, refer to the instructions in [Extreme Networks Pluggable Transceivers Installation Guide](#).

Connecting Network Interface Cables

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

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

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

- 1 Verify that you have identified the correct cable for the port.
- 2 Use an alcohol wipe or other appropriate cleaning agent to clean the cable connectors; make sure they are free of dust, oil, and other contaminants.
- 3 If you are using optical fiber cable, align the transmit (Tx) and receive (Rx) connectors with the correct corresponding connectors on the switch or the I/O module.
- 4 Press the cable connectors into their mating connectors on the switch or I/O module until the cable connector is firmly seated.
- 5 Repeat step 1 on page 35 through step 4 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.

5 Activating and Verifying the Switch

Connecting the Switch to a Management Console Configuring the Switch for Use

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

Check <http://ezcloudx.com/supportedhardware> to see what switch models can be managed with ExtremeCloud™. If your switch is entitled for management by ExtremeCloud, you can optionally use the installation instructions at <http://ezcloudx.com/quickstart>.

Otherwise, follow the instructions in these topics:

- [Connecting the Switch to a Management Console](#) on page 36
- [Configuring the Switch for Use](#) on page 36

Connecting the Switch to a Management Console

Connect each switch's serial console interface (an RJ45 jack) to a PC or terminal. The PC or terminal will serve as the management console, used to monitor and configure the switch.

The default communication protocol settings for the serial console interface are:

- Baud rate: 115200
- Data bits: 8
- Stop bit: 1
- Parity: None

Configuring the Switch for Use

After your switch is connected to power and completes its power-on self-tests, it is operational. Before logging in, verify that the switch LEDs are on (solid green or blinking green) and that it is connected to a management console as described in [Connecting the Switch to a Management Console](#) on page 36.

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

- 1 Using a terminal emulator such as PuTTY or TeraTerm, connect to the switch using the serial port connection.

Be sure that your serial connection is set properly:

- Baud rate: 115200
- Data bits: 8
- Stop bit: 1

- 2 Press **[Enter]** one or more times until you see the login prompt.

- 3 At the login prompt, log in using the default user name `rwa`.

For example:

```
login: rwa
```

When prompted for the password, enter `rwa`.

When you are logged in with the role-based authentication level of `rwa`, you can configure the login and password values for the other role-based authentication levels. For details, see *Quick Start Configuration for VOSS*.

- 4 Follow the steps for provisioning and verifying the switch in *Quick Start Configuration for VOSS*.

The switch is ready for use.

To configure security, see *Configuring Security*.

To configure other switch features, see *Documentation Reference*.

6 Monitoring the Switch

XA1400 Switch LEDs XA 12V 60W DC PSU LEDs

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

XA1400 Switch LEDs

The tables in the following sections describe the meanings of the LEDs on the front panel of the XA1400 Series switch:

- [XA1400 Series System LEDs](#) on page 38
- [RJ45 Port LEDs](#) on page 38
- [SFP+ Port LEDs](#) on page 39

XA1400 Series System LEDs

Table 9: XA1400 Series System Power and Status LEDs

Status LEDs	Color and Activity	Definition
System	Off	System Off
	GRN - Solid	System ON and Ready
	GRN - Flash	Booting
	AMB - Flash	Fail
Power	OFF	Power off
	GRN - Solid	Power ON - OK
	AMB - Solid	Internal/External PSU 1 Fail
	AMB - Flash	Internal/External PSU 2 Fail (if present)

RJ45 Port LEDs

Table 10: RJ45 Port LEDs

RJ45 Port LEDs	Color and Activity	Definition
Link/Act (left)	Off	No link
	GRN - Solid	Link is established
	GRN - Flash	Link activity

Table 10: RJ45 Port LEDs (continued)

RJ45 Port LEDs	Color and Activity	Definition
Speed (right, non-POE, 10/100/1000)ower	OFF	10M/100M or no link
	GRN - Solid	1G
Speed (right, non-POE, 100M/1G/2.5G/5G)	OFF	100M/1G/2.5G or no link
	GRN - Solid	5G
POE (right, POE)	OFF	No PD detected
	AMB - Solid	802.3af/at/bt PD is detected
	AMB - Flash	PoE Negotiation

SFP+ Port LEDs

Table 11: SFP+ Port LEDs

SFP+ Port LEDs	Color and Activity	Definition
Link/Act (left)	OFF	No link
	GRN - Solid	Link detected
	GRN - Flash	Link activity
Speed (right)	OFF	1G Link
	GRN - Solid	10G Link

XA 12V 60W DC PSU LEDs

The following tables describe the meanings of the LEDs on the 12V 60W DC power supply (part number XN-DCPWR-).

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

Table 12: 12V 60W 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

Table 12: 12V 60W DC Power Supply LED Status Indications (continued)

Label and Color	Description	State	Meaning
IN OK (Green)	DC input Good "IN OK"	On	DC input OK
		Off	DC input fail

A Technical Specifications

XA1400 Series Technical Specifications

This section lists technical specifications for the hardware products described in this document.

XA1400 Series Technical Specifications

The ExtremeAccess XA1400 Series includes the following switches:

- XA1440
- XA1480

Table 13: XA1400 Series Unpackaged Dimensions

XA1440 switch	Height: 4.4 cm (1.73 in) Width: 25 cm (9.84 in) Length: 25.2 cm (9.92 in)
XA1480 switch	Height: 4.4 cm (1.73 in) Width: 25 cm (9.84 in) Length: 25.2 cm (9.92 in)
Two-post rack mount kit (separately orderable)	Height: 3.71 cm (1.46 in) Width: 11.30 cm (4.45 in) Length: 15.01 cm (5.91 in)

Table 14: XA1400 Series Packaged Dimensions

XA1440	Height: 19 cm (7.48 in) Width: 32.4 cm (12.76 in) Length: 34.7 cm (13.66 in)
XA1480	Height: 19 cm (7.48 in) Width: 32.4 cm (12.76 in) Length: 34.7 cm (13.66 in)
Two-post rack mount kit (separately orderable)	Height: 8.38 cm (3.3 in) Width: 19.81cm (7.8 in) Length: 28.57cm (11.25 in)

Table 15: XA1400 Series Packaged Weight

XA1440	3.1 kg (6.83 lb)
XA1480	3.1 kg (6.83 lb)
Two-post rack mount kit (separately orderable)	0.8 kg (1.76 lb)

Power Options

Table 16: XA1400 Series Power Options

XA1400 Series	12V DC power supply: Part # XA1400-PWR-ADPT DC Input: 12V, 5A for each PSU
---------------	---

Mean Time Between Failures

Table 17: XA1400 MTBF

XA1440	324000 hrs @ 25°C
XA1480	324000 hrs @ 25°C

CPU, Memory

Table 18: CPU, Memory

Memory	XA1440 (4 core)	XA1480 (8 core)
DRAM	8G	8G
SSD	32GB	64GB
SEEPROM	16K bytes minimum for system ID (i2c connected)	16K bytes minimum for system ID (i2c connected)

Standards

Table 19: Safety Standards

North American Safety of ITE	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 EN 60950-1:2006 + A11:2009 + A1:2010+A12:2011 + A2:2013 EN 60825-1:2007, EN 60825-2:2004+A1+A2 or later (Lasers Safety) 2014/35/EU Low Voltage Directive
International Safety of ITE	CNS 14336-1 AS/NZX 60950-1 (Australia /New Zealand) IEC 62368-1:2014/AA:2017 IEC 60950-1:2005 (2nd Ed.) + Am1:2009+ Am2:2013 GB 4943.1-2011

Table 20: EMI/EMC Standards

North America EMC for ITE	FCC 47 CFR part 15 subpart B Class B (USA) ICES-003 (Canada)
European EMC standards	IEC 61000-6-4:2007+A1:2011 EN 61000-6-2:2005+AC:2005 EN 55032:2015/AC:2016 Class B EN 55024:2010/A1:2015 EN 55011:2009+A1:2010 Class B EN 61000-3-2:2014 Class B EN 61000-3-3:2013 2014/30/EU EMC Directive
International EMC certifications	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 IEC 61000-6-4:2018 ED 3.0 AS/NZS CISPR32:2015 Class B CISPR11:2009 ED 5.0 Class B CISPR24:2010+AMD1:2015 ED 2.0 Class B CNS 13438-2006 KN22, KN24 GB/T9254-2008 VCCI-CISPER 32:2016 Class B IEC 61000-6-2:2016 ED 3.0
Country-specific	RCM (Australia) VCCI Class A (Japan) MSIP KCC (Korea) BSMI (Taiwan) ANATEL (Brazil) CCC mark (China) SABS, NRCS (South Africa)

Table 21: 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 22: IEEE 802.3 Media Access Standards

IEEE 802.3 IEEE 802.3bz IEEE 802.3at IEEE 802.3bt
--

Environmental Data

Table 23: Environmental Data

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	<ul style="list-style-type: none"> 0°C to 40°C (32°F to 104°F) up to 2000m (6,561 ft)
Other operating conditions	Humidity: 10% to 90% relative humidity, non-condensing Altitude: 0 to 2,000 meters (6,561 feet) Operational shock (half sine): 30 m/s ² (3 G), 11 ms, 60 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)

B Safety and Regulatory Information

Considerations Before Installing
General Safety Precautions
Maintenance Safety
Cable Routing for LAN Systems
Installing Power Supply Units and Connecting Power
Selecting Power Supply Cords
Battery Notice
Regulatory Notices



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 40°C (104°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.

Cable Routing for LAN Systems

Extreme Networks equipment meets the requirements for LAN system equipment.

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

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

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



Caution

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



Warning

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

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

Installing Power Supply Units and Connecting 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.

Selecting Power Supply Cords

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

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

Note



This equipment is not intended to be directly powered by power distribution systems where phase-phase voltages exceed 240 VAC (2P+PE), such as those used in Norway, France, and other countries. For these applications 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.

Regulatory Notices

Depending on where you are located, some or all of the following regulatory notices may apply to your Extreme Networks product.

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 2004/108/EEC EMC Directive and the 2006/95/EC Low Voltage Directives
- UL and/or CSA registered component for North America
- 47 CFR Part 15, Class A when installed into Extreme products

Industry Canada Notice

CAN ICES-3 (A)/NMB-3(A)

This digital apparatus does not exceed the class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Class A ITE Notice



Warning

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

Korea EMC Statement

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

Australia (RCM)



Warning

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

Electromagnetic Compatibility (EMC)

This product complies with the following: FCC 47 CFR Part 15 Subpart B Class A (US), ICES-003 (Canada), EN 55032 (ITE Emissions), EN 55024 (ITE Immunity), EN 61000-3-2 (Harmonics), EN 61000-3-3 (Flicker), 2014/30/EU (EMC Directive), EN 300 386 (Telecom), EN 55011 (ISM), EN 61000-6-2 (Ind. Immunity), EN 61000-6-4 (Ind. Emissions), RCM (Australia), VCCI (Japan), MSIP KCC (Korea), BSMI (Taiwan), ANATEL (Brazil), CCC (China).

VCCI Notice

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

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI - A

BSMI EMC Statement - Taiwan

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.

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。

Battery Warning - Taiwan

警告

如果更換不正確之電池型式會有爆炸的風險，
請依製造商說明書處理用過之電池。

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.

Hazardous Substances

This product complies with the requirements of Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Hazardous Substances- China and Taiwan BSMI RoHS

Guidance concerning the China and Taiwan BSMI RoHS (Restriction of Hazardous Substances) directive for this Extreme Networks product can be found on the following web page:

www.extremenetworks.com/support/documentation/restriction-hazardoussubstances/

The page contains tables detailing the presence of 10 substances defined by the RoHS directive.

European Waste Electrical and Electronic Equipment (WEEE) Notice



European Waste Electrical and Electronic Equipment (WEEE) Notice In accordance with Directive 2012/19/EU of the European Parliament on waste electrical and electronic equipment (WEEE):

- 1 The symbol above indicates that separate collection of electrical and electronic equipment is required.
- 2 When this product has reached the end of its serviceable life, it cannot be disposed of as unsorted municipal waste. It must be collected and treated separately.
- 3 It has been determined by the European Parliament that there are potential negative effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment.
- 4 It is the users' responsibility to utilize the available collection system to ensure WEEE is properly treated.

For information about the available collection system, please contact Extreme Customer Support at +353 61 705500 (Ireland).

Index

Specials

_REPLACE THIS TEXT, OR DELETE THIS ENTIRE INDEXTERM ELEMENT IF YOU DO NOT NEED IT 4

Numerics

- 12V 60W DC power supply
 - features 10
- 12V DC power supply
 - LEDs 39

A

- access 13
- alert, power supply 10
- amperage
 - calculating for UPS 24
- ANSI standards 25

B

- battery notice 49, 52
- bend radius 17, 18
- BICSI 16
- brackets, for mounting in rack 28
- building codes 12
- Building Industry Consulting Service International., see BICSI

C

- cable
 - ANSI standards 25
 - bend radius 18
 - bundling 17
 - category 5 17
 - fiber optic 18, 35
 - for switch ports 35
 - installing 17, 18
 - labeling 16
 - network interface 35
 - optical 34
 - plenum-rated 17
 - RJ45 22
 - slack 17
 - standards 16
 - types and distances 19, 21
- category 5 cable 17
- Class A ITE Notice 51
- commercial building standards 25
- components
 - optional 34
- configuring the switch 36
- connecting
 - to management console 36

- connector jackets
 - RJ45 22
- console port
 - settings 36
- conventions
 - notice icons 4
 - text 4
- cords
 - selecting 49

D

- DC power supply
 - LEDs 39
- design standards 25
- disposing of waste 53
- distances
 - cables 19, 21
- documentation
 - feedback 6
 - location 5

E

- electrical codes 12
- electrostatic discharge, see ESD
- environmental data
 - XA1400 44
- environmental requirements
 - building codes 12
 - electrical codes 12
 - electrostatic discharge (ESD) 14
 - humidity 14
 - temperature 13
 - wiring closet 13
- equipment
 - installing 26
 - tools needed to install 27
- equipment rack
 - grounding 15
 - mechanical recommendations 15
 - mounting holes 15
 - securing 16
 - service access 15
 - space requirements 15
- ESD
 - discharge from cable 17
 - system protection 14

F

- fiber optic cable
 - bend radius 18
 - connecting 35
 - handling 18
 - installing 18

first switch login 36
 frequency, *see* radio frequency interference (RFI)

G

grounding
 racks 15
 requirements 25
 wiring closet 13

H

hazardous substances 53
 humidity 14

I

Industry Canada Notice 50
 industry standards 25
 initial switch login 36
 installing
 fiber optic cable 18
 in two-post rack 28
 optical transceivers 34
 optional components 34
 personnel 27
 power supply unit (PSU) 26
 preparation 11
 preparing 27
 switches 26–28
 tools 27
 using mounting brackets) 28

J

jackets
 RJ45 connector 22

L

labeling cables 16
 LEDs
 12V DC power supply 39
 XA1400 38, 39
 license options 9
 local management connection 36
 logging in to the switch 36

M

management port
 connecting to switch 36
 settings 36
 mounting brackets
 attaching to two-post rack 28
 mounting kit
 two-post rack 28

N

network interface connections 35

O

Open Source Declaration 5
 operating environment requirements 13
 optical cables
 installing 34
 optical transceivers
 installing 34
 optional components
 installing 34

P

planning
 site 11
 plenum-rated cable 17
 pluggable transceivers, *see* optical transceivers
 ports
 console port settings 36
 management 36
 power cords
 selecting 23, 49
 power requirements
 power supply 23
 power specifications
 XA1400 41
 power supply unit (PSU)
 12V DC 10
 alert 10
 installing 26
 power requirements 23
 safety 26

R

rack
 attaching switch 28
 rack specifications
 grounding 15
 securing to floor 16
 space requirements 15
 radio frequency interference (RFI)
 patch panel installation 17
 preventing 23
 regulatory information 45
 restricted 13
 restricted access 13
 RFI, *see* radio frequency interference (RFI)
 RJ45 cable 22

S

safety
 requirements 45
 when installing PSUs 26

- service access to the rack 15
- settings
 - for management console 36
- signal quality 23
- site planning 11
- site preparation 27
- slack in cable 17
- space requirements, rack 15
- specifications
 - equipment racks 15
 - XA1400 41, 42, 44
- standards
 - cabling 16, 25
 - commercial building 25
 - design 25
 - grounding 25
 - XA1400 42
- support, see technical support
- switches
 - initial login 36
 - installing 26
 - installing in two-post rack 28
 - installing optional components 34
 - tools needed to install 27

T

- technical support
 - contacting 6
- temperature 13, 44
- tools for installing equipment
 - switches 27
- transceivers, see optical transceivers
- transition time
 - UPS 25

U

- unshielded twisted pair, see UTP cable
- UPS (uninterruptible power supply)
 - requirements 24
 - selecting 24
 - transition time 25
- UTP cable
 - bend radius 17
 - category 5 17
 - discharge ESD 17
 - preventing RFI 23

V

- virtualization license 9
- VOSS
 - initial login 36
 - license options 9
- VSP Series switches
 - license options 9

W

- waste disposal 53
- wiring closet
 - electrostatic discharge (ESD) 14
 - floor coverings 13
 - grounding 13
 - humidity 14
 - rack, securing 16
 - temperature 13
- wiring terminals 15

X

- XA1400 Series
 - environmental data 44
 - LEDs 38, 39
 - power specifications 41
 - specifications 41, 42, 44
 - standards 42
- XA1400 Series appliance
 - overview 8
- XA1400 Series switches
 - features 8