

Installing Ethernet Routing Switch 4900 Series

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Chapter 1: About this Document

This section discusses the purpose of this document, the conventions used, ways to provide feedback, additional help, and information regarding other Extreme Networks publications.

Purpose

This document provides the information and procedures required to install the hardware, software, cabling, and power for the Extreme Networks Ethernet Routing Switch 4900 Series.

Unless otherwise indicated, this information applies to:

- ERS 4950GTS
- ERS 4950GTS-PWR+
- ERS 4926GTS
- ERS 4926GTS-PWR+

Conventions

This section discusses the conventions used in this guide.

Text Conventions

The following tables list text conventions that can be used throughout this document.

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- · 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

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Chapter 2: New in this document

There are no feature changes in this release.

Other changes

The Rack Requirement section is updated. For more information, see <u>Installing the ERS 4900</u> <u>Series in an Equipment Rack</u> on page 24.

Chapter 3: Preinstallation Checklist

Before you install the Ethernet Routing Switch 4900 Series, make sure that you complete the tasks in the preinstallation checklist.

No.	Task	Description	~
1.	Review the technical specification for the switch. Make sure that the area where you install the switch and where it will operate meet the requirements.	For the physical, electrical, and environmental specifications, see Technical specifications on page 16.	
2.	Verify the power supply unit (PSU) specifications. Optionally order a redundant PSU to provide redundancy and load sharing.	See AC power specifications on page 17.	
3.	Make sure that you have the following tools and cables:	See <u>Cable requirements</u> on page 36.	
	Phillips #2 screwdriver RJ-45 console port cable		
	• ESD cable		
4.	Unpack the equipment.	Observe ESD precautions when you unpack the equipment. See <u>Electrostatic</u> <u>discharge prevention</u> on page 15.	
5.	Verify the contents of the shipped package.	See Verifying package contents on page 21 for a description of the components that are provided with the switch. If any components are missing, contact Extreme Networks support at http://www.extremenetworks.com/support .	
6.	Make sure that the power cord has the correct country-specific termination.	See <u>Power cord type and order codes</u> on page 19.	
7.	Prepare the rack.	Ensure that there is enough rack space to accommodate specific models.	
		For more information, see Installing the ERS 4900 Series in an Equipment Rack on page 24 for rack space unit requirements.	

No.	Task	Description	~
		Ensure that the rack is bolted to the floor and braced if necessary.	
		Ensure that the rack is grounded to the same grounding electrode used by the power service in the area. The ground path must be permanent and must not exceed 1 Ohm of resistance from the rack to the grounding electrode.	
		See Installing the switch in an equipment rack on page 24.	

Chapter 4: Installation Preparation

Ethernet Routing Switch 4900 Series Models

The following table lists the ERS 4900 Series models and the key features for each switch.

Table 1: ERS 4900 Series models

Model	Key features	Part Number
ERS 4926GTS	24 ports, 10/100/1000 Base-T Ethernet with two ports of SFP + (10 Gbps) interfaces	AL4900A01-E6 (no power cord)
	Stackable Ethernet switch	
	• Non-PoE	
	Supports two modular 250 W Power Supply Units (PSU), where one PSU is required for operation and the optional second is redundant	
ERS 4926GTS-PWR+	24 ports 10/100/1000BaseT	AL4900A02-E6 (no power cord)
	Stackable Ethernet switch	
	PoE	
	1 rack unit high	
	Uses modular power supply units and has two field-serviceable power supply receptacles, which support 250 W AC power supply modules	
ERS 4950GTS	48 ports 10/100/1000BaseT	AL4900A03-E61 (no power cord)
	Stackable Ethernet switch	
	Non-PoE	
	1 rack unit high	
	Uses modular power supply units and has two field-serviceable power	

Model	Key features	Part Number
	supply receptacles, which support 1025 W AC power supply modules	
ERS 4950GTS-PWR+	48 ports 10/100/1000BaseT	AL4900A04-E6 (no power cord)
	Stackable Ethernet switch	
	PoE	
	1 rack unit high	
	Uses modular power supply units and has two field-serviceable power supply receptacles, which support 1025 W AC power supply modules	

Power cords must be ordered separately.

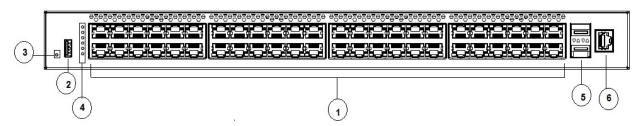
Depending on the switch model, a 250 W or 1025 W PSU and .5 m stacking cable is provided for all switches.

Common Hardware Features

The following hardware features are part of all switches in ERS 4900 Series:

- Standard ERS 19 inch rack mount hole pattern allowing horizontal or vertical, flush or offset, front or rear mount options
- Front panel:
 - one serial console connection
 - one USB 2.1 Type A port
 - status LED display panel

The following figure illustrates ERS 4900 Series front panel.



- 1. 10/100/1000 Ports (LEDs above the ports)
- 2. USB Type-A port
- 3. Reset push button
- 4. Status LEDs
- 5. SFP+ ports
- 6. Serial console port

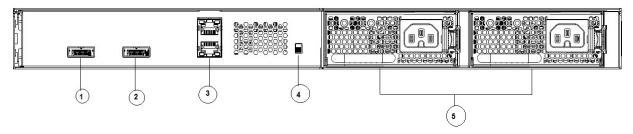
Figure 1: Front panel

- · Rear panel:
 - two stack connectors
 - one Base Select switch
 - ports
 - Note:

The port labeled AUX is disabled.

- power supply units
- one Kensington Lock slot located on the left side, near the back end of the chassis

The following figure illustrates ERS 4900 Series rear panel.



- 1. Stack up connector
- 2. Stack down connector
- 3. Ports
- 4. Base Select Switch
- 5. Power Supply Units

Figure 2: Rear panel

Universal Serial Bus Oorts

The switches feature a Universal Serial Bus (USB) port on the front panel. Switch administrators can use the USB port to perform tasks, previously performed through Trivial File Transfer Protocol (TFTP), with a USB Mass Storage Device (for example, a flash drive or thumb drive):

- · download software
- · generate and download the ASCII configuration file
- · generate and download the binary configuration file

The storage capacity of the USB device in use limits file and system operations.

Support is available only for USB drives that comply with the Mass Storage subsection of the USB 1.1 and USB 2.0 specification. Support does not extend to third-party devices that do not comply with these standards. Off-the-shelf drives that do not comply with these standards cannot operate with the switch. Only FAT or FAT32 file systems are currently supported; USB drives with NTFS file systems are not supported. Consult the documentation provided with the USB drive to ensure compliance with these standards.

Electrostatic Discharge Prevention

Electrostatic discharge (ESD) is a discharge of stored static electricity that can damage equipment and impair electrical circuitry. These electrostatic voltages can result from friction, including, but not exclusive to, pulling cabling through conduits, walking across carpeted areas, and building up of static charge in clothing. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. While networking equipment is commonly designed and tested to withstand common mode ESD events, voltage sometimes can be discharged to some connector pins but not others, or to some pins before others, which has the potential to damage the networking equipment.

To protect the switch against ESD damage, take the following preventive measures before connecting any data cables to the device:

- Always use antistatic wrist straps. Make sure the strap is adjusted to provide good skin contact.
- Ensure that work surfaces and equipment racks are properly grounded for protection against electrostatic discharge. The common point must be connected to the building ground wire. In a properly wired building, the nearest reliable ground is typically at the electrical outlet.
- Avoid contact between equipment and clothing. The wrist or ankle strap only protects the equipment from ESD voltages on the body; ESD voltages on clothing can still cause damage.
- · Avoid touching any connector pins.
- Do not remove the wrist or ankle strap until the installation is complete.

With new cable installations, you should use an ESD cable to reduce the potential for damage from static that can build up in cables. See the following figure.

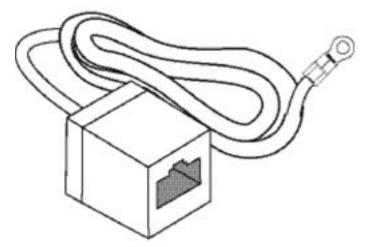


Figure 3: ESD cable

Technical Specifications

The following table provides the technical specifications for the switches in this series. Ensure that the area where you install the switch and where it operates meets these requirements.



Marning:

To avoid bodily injury from hazardous electrical shock and current, never remove the top of the device. No user-serviceable components are inside.

Table 2: Physical specifications

Height	4.4 cm – 1RU	
Width	17.32 inch (440 mm or 44 cm) - 19 inch rack mountable	
Depth	18.89 inch (480 mm or 48 cm)	
Weight (switch weight with one PSU. Where, PSU approximately weighs 1.6 kg)	• ERS 4926GTS: 7.2 kg	
	• ERS 4926GTS-PWR+: 7.9 kg	
	• ERS 4950GTS: 7.3 kg	
	• ERS 4950GTS-PWR+: 8.0 kg	

Table 3: Environmental specifications

Operating Temperature	0° and 50° C (32° and 106° F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Humidity	0 to 95 percent non-condensing
Storage Humidity	0 to 95 percent non-condensing
Maximum Operating Altitude	3,048 m (10,000 feet) above sea level
Storage Altitude	0 to 12,192 m (0 to 40,000 feet) above sea level
Acoustic Noise	At 25°C Ambient Temperature, less than 48 dBA typical, at 50°C, less than 61 dBA.
Miscellaneous Operating Considerations	No nearby heat sources such as hot air vents or direct sunlight
	No nearby sources of severe electromagnetic noise
	No excessive dust
	Adequate power source within six feet; one circuit required for each power supply (see table, AC power specifications)
	At least 2 inches (5.08 cm) on each side of the switch unit for ventilation
	Cables should be dressed to prevent blocking air flow.

Power Specifications

This section provides the following power specifications for the switch:

- AC power specifications on page 17
- Typical power consumption on page 18
- PoE+ budget calculations on page 18

The following table describes the AC power specifications.

Table 4: AC power specifications

Model	Number of Power supplies	Power supply		Input p		Thermal rating (BTUs/hr
		Rated	Line voltage	Watts (Total)	Amps	maximum)
ERS 4950GTS	1	250 W	200–240 VAC	53.14	0.30	181.31
	2	250 W/PSU	200–240 VAC	58.88	0.44	200.89
	1	250 W	100-110 VAC	53.67	0.51	183.12
	2	250 W/PSU	100-110 VAC	59.53	0.58	203.11
ERS 4926GTS	1	250 W	200–240 VAC	39.37	0.25	134.33
	2	250 W/PSU	200–240 VAC	46.23	0.40	157.73
	1	250 W	100-110 VAC	39.43	0.38	134.53
	2	250 W/PSU	100-110 VAC	44.35	0.46	151.32
ERS 4950GTS-	1	1025 W	200–240 VAC	820.89	3.80	358.90
PWR+	2	1025 W	200–240 VAC	1586.25	7.15	584.30
	1	1025 W	100-110 VAC	842.10	7.75	431.95
	2	1025 W	100-110 VAC	1660.07	15.15	837.88
ERS 4926GTS-	1	1025 W	200–240 VAC	792.53	3.57	308.88
PWR+	2	1025 W	200–240 VAC	816.03	3.78	342.32
	1	1025 W	100-110 VAC	825.11	7.55	413.56
	2	1025 W	100-110 VAC	839.64	7.73	424.24

The following table provides typical power consumption.

Table 5: Typical power consumption

Model	Idle Power consumption (Watts)	Typical Power consumption (Watts)			
		Devices connected to all ports, typical traffic, without SFPs	Devices connected to all ports, typical traffic, 6 W average per PoE device	With Energy Saver enabled (PoE Saver disabled on PoE models)	
ERS 4950GTS	43.9	53.0	NA	44.0	
ERS 4926GTS	34.9	40.0	NA	34.9	
ERS 4950GTS-PWR+	65.9	73.4	382.0	65.9	
ERS 4926GTS-PWR+	51.4	55.8	208.8	51.5	

The following table describes the Power over Ethernet (PoE+) specifications.

Table 6: PoE+ budget calculations

Model	Power supply configuration	Power supply		Power over Ethernet (PoE+) power output		
		Rated power per PSU (W)	Line voltage	Max Power per Port W)	Max # ports Max PWR/port	Max power output Sum of all Ports (W)
ERS 4926GTS-	2 PSU	1025	1025 110–240VAC	30	24	720
PWR+	1 PSU			30	24	720
ERS 4950GTS-	2 PSU	1025 110–240\	110 240\/AC	30	48	1440
PWR+	1 PSU		110-240 VAC	30	25	750

MTBF Values

The following table lists the MTBF values for the switches in ERS 4900 Series in combination with one or two PSUs.

Model	Number of PSUs	Power Supply rating	MTBF (hours)
ERS 4926GTS	1	250W	212,509
	2	250W	191,705
ERS 4926GTS-PWR+	1	1025W	211,044
	2	1025W	197,295
ERS 4950GTS	1	250W	199,834
	2	250W	181,329

Model	Number of PSUs	Power Supply rating	MTBF (hours)
ERS 4950GTS-PWR+	1	1025W	195,578
	2	1025W	183,714

Power Supply Cords

Each control unit and expansion module requires a switched power outlet socket rated at 110-240V AC, 50-60 Hz. Connection from that power outlet socket requires an appropriate locale specific power cord which is not supplied with the unit and must be ordered separately.

Power cords must not be attached to the building surface or run through walls, ceilings, floors and similar openings. Installation measures must be taken to prevent physical damage to the power supply cord, including proper routing of the power supply cord and provision of a socket outlet near the fixed equipment or positioning of the equipment near a socket outlet.

Power Cord Type and Order Codes

Two modular power supplies are supported and each power supply has its own power cord.

ERS 4900 Series switch models that support PoE use 1025 W power supply. This power supply is unique to ERS 4900 Series. The power adapter on 1025 W power supply utilizes an IEC 60320 C16 connector. The IEC 60320 C16 connector accepts only an IEC 60320 C15 mating power cable and the IEC 60320 C16 connector utilizes a keying feature which prevents IEC 60320 C13 connector from being inserted in C16 socket.

The switches that do not support PoE, use 250 W power supply. The power adapter on the 250 W power supply utilizes an IEC 60320 C14 connector. The IEC 60320 C14 connector accepts either an IEC 60320 C13 or IEC 60320 C15 mating power cable.

The following table provides information about the switches and their supported cord type.

Table 7: Support matrix

		Power socket	
ERS Model	Power Supply	IEC 60320 C14	IEC 60320 C16
ERS 4950GTS	AL1905A09-E6	~	
ERS 4926GTS	AL1905A09-E6	~	

		Power socket	
ERS Model	Power Supply	IEC 60320 C14	IEC 60320 C16
ERS 4950GTS-PWR+	AL1905A19-E6		V
ERS 4926GTS-PWR+	AL1905A19-E6		V

This section provides ordering information for power cords.

Table 8: Power cords for power distribution units

Order Code	Length	Power supply side connector	Power source side connector	Safety Approval
700512239	3 m	C13	C14	USA
700512240	3 m	C15	C14	USA
700512241	3 m	C13	C14	International except Japan and Taiwan
700512242	3 m	C15	C14	International except Japan and Taiwan

Table 9: Power Cords with C14 power supply side connector

Order Code	Description	Region
AA0020062E6	Power cord 3.05 m IEC C13 to NEMA 5-15P	North America
AA0020063E6	Power cord 2.5 m IEC C13 to BS1363	United Kingdom
AA0020064E6	Power cord 2.5 m IEC C13 to CEE 7/7	European Union
AA0020065E6	Power cord 2.5 m IEC C13 to CEI 23-16	Italy
AA0020066E6	Power cord 2.5 m IEC C13 to GB 2099.1-1996	China
AA0020067E6	Power cord 2.5 m IEC C13 to BS-546/SANS164-1	India & South Africa
AA0020068E6	Power cord 2.5 m IEC C13 to AS 3112	Australia
AA0020069E6	Power cord 2.5 m IEC C13 to JIS 8303	Japan
AA0020101-E6	Power cord 2.5 m IEC C13 to NBR 14136 (IEC 60906-1)	Brazil
AA0020104-E6	Power cord 2.5 m IEC C13 to SEV 1011	Switzerland

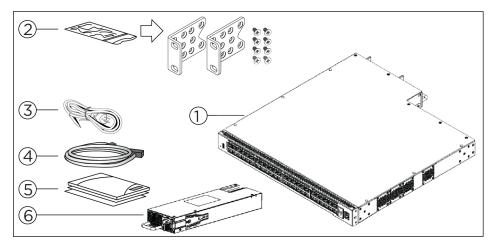
Order Code	Description	Region
AA0020107-E6	Power cord 2.5 m IEC C13 to SI-32	Israel

Table 10: Power cords for use with C14 or C16 power supply side connector

Order Code	Description	Region
AA0020071-E6	Power cord 2.5 m IEC C15 to BS1363	United Kingdom
AA0020072-E6	Power cord 2.5 m IEC C15 to CEE 7/7	European Union
AA0020073-E6	Power cord 2.5 m IEC C15 to JIS 8303	Japan
AA0020074-E6	Power cord 2.0 m IEC C15 to NEMA 5-15P	North America
AA0020075-E6	Power cord 2.5 m IEC C15 to AS 3112	Australia
AA0020094-E6	Power cord 2.5 m IEC C15 to CNS 690 BSMI	Taiwan
AA0020097-E6	Power cord 2.5 m IEC C15 to SANS 164-1 PLUG	South Africa
AA0020100-E6	Power cord 2.5 m IEC C15 to NBR 14136	Brazil
AA0020103-E6	Power cord 2.5 m IEC C15 to SEV 1011	Switzerland
AA0020105-E6	Power cord 2.5 m IEC C15 to CEI 23-16	Italy
AA0020106-E6	Power cord 2.5 m IEC C15 to SI-32	Israel
AA0020108-E6	Power cord 2.5 m IEC C15 to NEMA L6-15P TWIST LOCK	North America
AA0020109-E6	Power cord 2.5 m IEC C15 to BS-546	India
AA0020110-E6	Power cord 2.5 m IEC C15 to IRAM 2073	Argentina

Verify the Package Contents

For each ERS 4900 Series, verify the package contents with the items in the following figure to ensure you have received all components. If any components are missing, contact the vendor where you purchased the switch.



- 1. Ethernet Routing Switch 4900 Series.
- 2. Rack-mounting hardware that includes:
 - Rack-mount brackets (2)
 - Screws to attach brackets to the switch (8)
 - Note: Screws to attach the rack mount kit to rack are not provided.
- **3.** AC power cord.
 - (Note: A power cord is not included for the A variant of the switch)
- 4. Standard .5 m stacking cable.
- **5.** Documentation includes the Base software license kit, Quick Install poster, and Regulatory documents.
- 6. Field replaceable power supply.

Note: Two field replaceable power supplies are supported for models ERS 4950GTS, ERS 4926GTS, ERS 4950GTS-PWR+, and ERS 4926GTS-PWR+. One power supply is already installed.

Note: Ensure to order Direct Attach cables and SFP or SFP+ Transceivers if required.

Optional rack-mounting equipment

If you plan to rack-mount the switch, ensure the following equipment is available:

Table 11: Optional equipment

Optional equipment	Order code	Equipment
Spare Rack Mount Kit—used as a replacement rack mount kit.	700512595	
19 inch Rack Mount kit		

Power Supply Unit specifications

The following table lists the order codes for optional Power Supply Units (PSU).

Table 12: PSU specifications

Switch Model	Primary PSU	Optional Secondary PSU
р	250W AC power supply	250W AC Power Supply
ERS 4950GTS, ERS 4926GTS	(replacement order code: AL1905?09-E6)	(order code: AL1905?09-E6)
ERS 4950GTS-PWR+, ERS 4926GTS-PWR+	1025W AC POE+ power supply (replacement order code: AL1905?19-E6)	1025W AC power supply (order code: AL1905?19-E6)

Connecting Switch to AC Power

About this task

Connect a switch to a power source.

Before you begin

- Ensure to check AC power specifications for the switch. For more information, see <u>AC power specifications</u> on page 17.
- Ensure to check the AC power cord for international use. You must use a power cord that is approved for the receptacle type in your country. For more information, see Power cord type and order codes on page 19.

Procedure

Connect the AC power cord to the back of the switch, then connect the cord to a power outlet.



ERS 4900 does not have a power switch. When you connect the AC power cord to a suitable AC power outlet, the switch powers up immediately.

Next steps

Check the front-panel LEDs as the device is powered on to be sure the PWR LED is lit. If not, check that the power cable is correctly plugged in.

See Checking Light Emitting Diode on the switch on page 41.

Chapter 5: Switch Installation

This section describes how to install the switch in an equipment rack.

Installing the ERS 4900 Series in an Equipment Rack

About this task

Install the ERS 4900 Series in an equipment rack using the supplied brackets. The brackets secure the chassis and prevent it from sliding around during vibration or when inserting or extracting transceivers.

Before you begin

Rack requirements

- EIA or IEC-standard 19-inch (48.2-centimeter) equipment rack that is bolted to the floor and braced, if necessary.
- Rack is grounded to the same grounding electrode used by the power service in the area. The ground path must be permanent and must not exceed 1 Ohm of resistance from the rack to the grounding electrode.
- Appropriate rack space is available to accommodate 1U switch height (44 mm).

Note:

We do not supply the bolts used to secure the switch to the rack. Ensure you obtain the appropriate bolts to secure the switch to your specific rack before you begin.



Caution:

When you mount the device in a rack, do not stack units directly on top of one another. You must secure each unit to the rack with the appropriate mounting brackets. Mounting brackets cannot support multiple units. For a translation of this statement, see Translation of safety messages on page 47.

Procedure

- 1. Ensure power is disconnected from the switch.
- 2. Attach a bracket to each side of the switch with the included screws.

Attach the brackets in the best position for your specific equipment rack.

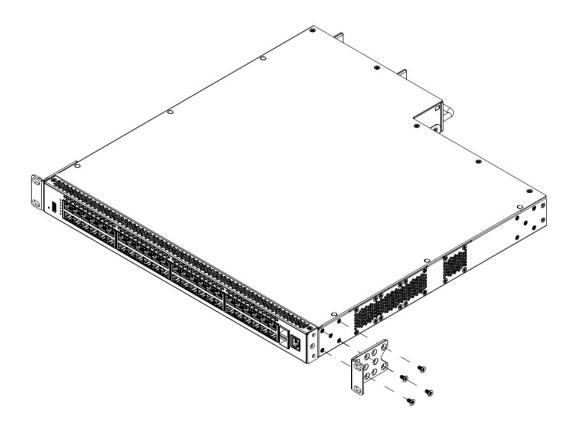


Figure 4: Front-mounted rack bracket installation

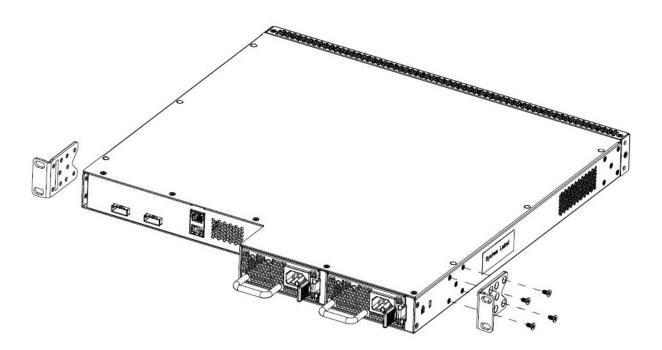


Figure 5: Rear-mounted rack bracket installation

- 3. Slide the switch into the rack.
- 4. Insert and tighten the rack mount screws.

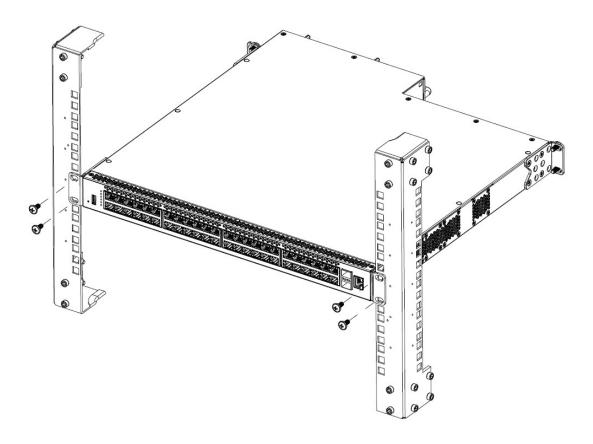


Figure 6: Front-mounted rack installation

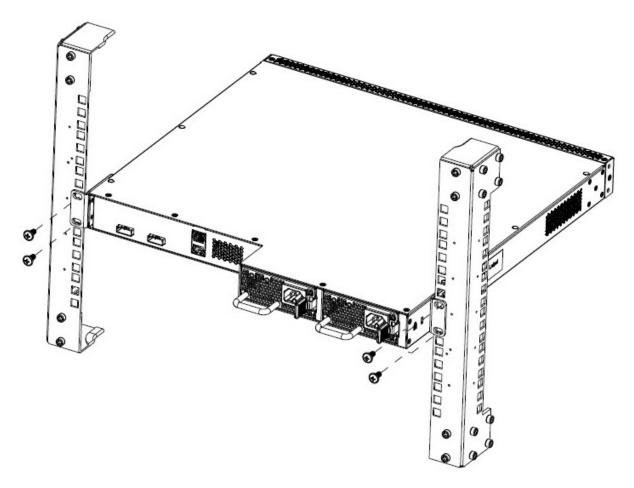


Figure 7: Rear-mounted rack bracket installation

Installing Optional Four-Post Rack-Mount Brackets

Perform this procedure to assemble and install the four-post rack-mount bracket kit.

Before you begin

Ensure to check for the following:

- Four-post server rack-mount kit.
- Verify that you have all the screws and brackets to assemble and install the four-post rack mount kit.
- Tools:
 - Phillips screwdriver to attach brackets to the switch and the switch to the rack.
 - Hex wrench to assemble and attach the optional four-post rack-mount brackets.

- · Rack requirements:
 - Appropriate rack space to accommodate 1U switch height is 1.7 inches (44 millimeters).
 - Four-post rack bolted to floor and braced if necessary.
 - Four post-rack must be grounded to the same grounding electrode used by the power service in the area. The ground path must be permanent and must not exceed 1 ohm of resistance from the rack to the grounding electrode.

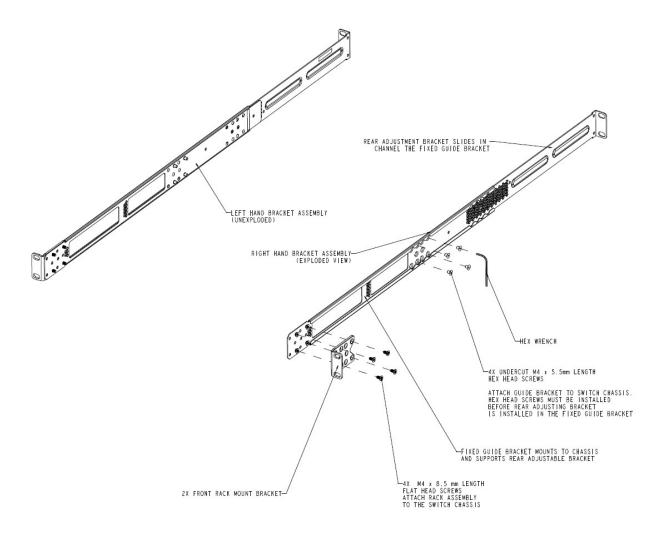
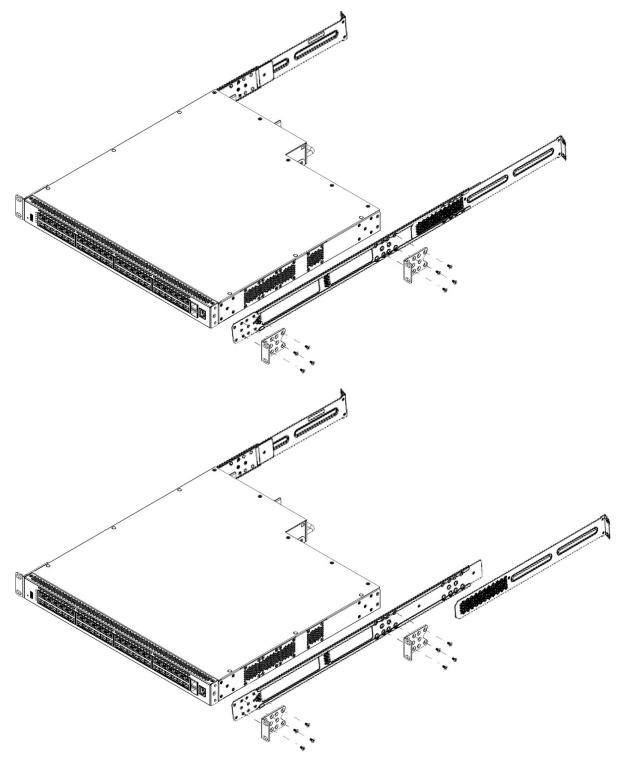


Figure 8: Four-post rack-mount kit assembly

Procedure

- 1. Attach a front bracket to each guide bracket with four 8.5 mm length flat head machine screws.
- 2. Attach the guide brackets to the switch chassis.



- a. Use four M4 x 5.5 mm undercut flat-head hex machine screws to attach the rear of each guide bracket to the switch chassis.
- b. Verify that the rear screws sit flush in the guide brackets.

- c. Test fit the rear mounting brackets in the guide brackets and verify that the rear brackets can slide in the channels. Remove the rear brackets.
- 3. Install the switch into the equipment rack, temporarily using only the front rack mounts and screws.

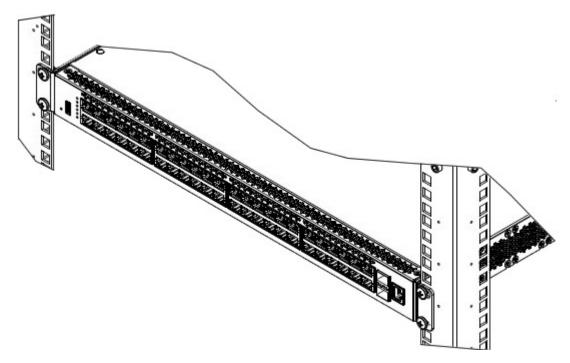


Figure 9: Install switch in rack using front rack mounts

- 4. Attach the rear mounting brackets and secure the switch to the rear rack posts.
 - a. Slide a rear mounting bracket into each guide bracket channel until flush with the rear rack posts.
 - b. Secure the rear mounting brackets to the switch chassis with the pan-head screws.

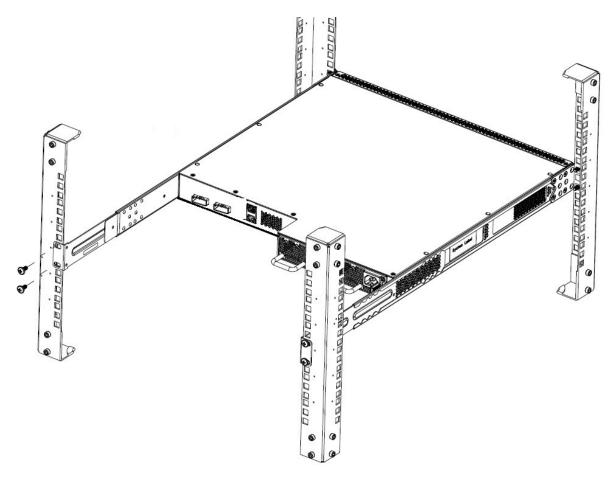


Figure 10: Attach rear mounting brackets

You can proceed with the installation by connecting power and network connections to the switch.

Installing the Secondary Power Supply

About this task

Your switch supports a combination of two field replaceable power supplies. You can install a secondary power supply to provide redundancy, and load sharing.

Before you begin

Verify switch compatibility with the power supply. For more information, see **Power supply** specifications on page 19.



Electrostatic alert:

To prevent damage from electrostatic discharge, always wear an antistatic wrist strap connected to an ESD jack when performing maintenance on a switch. Ensure that the wrist strap makes contact with your skin.

Procedure

- 1. Insert each power supply into a rear power supply slot.
 - If a blanking plate covers the required power-supply slot, remove the plate before inserting the power supply.
- 2. Verify that each fan tray is fully seated in the slot and secure each fan tray with two thumb screws.



Note:

The switch chassis can prevent an incorrect installation of a power supply. If you insert a power supply upside down, it may not get inserted fully and the thumb screws will not engage.

Connecting a Transceiver to the Switch or Stack

The following sections describe small form factor pluggable (SFP) transceivers.

Installing SFP Transceivers

About this task

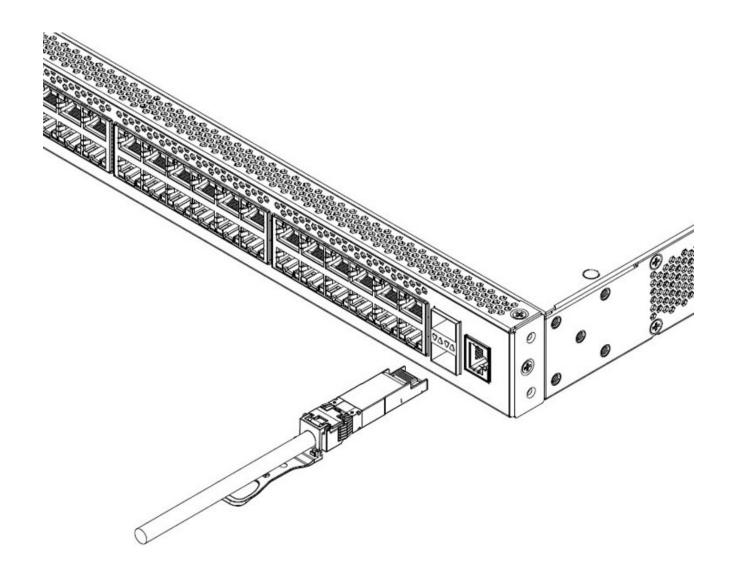
This procedure describes the steps used to install transceivers.

Procedure

- 1. Remove the transceiver from the protective packaging.
- 2. Verify that the transceiver is the correct model for the network configuration.
- 3. Grasp the transceiver between the thumb and forefinger.
- 4. Insert the transceiver into the proper module on the switch. Apply a light pressure to the transceiver until it clicks and locks into position in the module.
- 5. Remove the dust cover from the transceiver optical bores.

Example

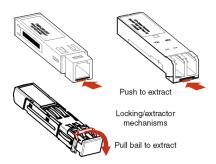
The following graphic shows an SFP transceiver.



Removing SFP Transceivers

Remove SFP transceivers by performing this procedure.

- 1. Disconnect the network fiber cable from the transceiver.
- 2. Use the locking mechanism on the transceiver to release it. The locking mechanism varies from model to model as illustrated below.



- 3. Slide the transceiver from the module slot.
- 4. If the transceiver does not slide easily from the module slot, use a gentle side-to-side rocking motion while firmly pulling the transceiver from the slot.
- 5. Attach a dust cover over the fiber-optic bores and store the transceiver in a safe place until you need it.

Important:

Discard transceivers in accordance with the proper laws and regulations.

Supported Optical Devices

Use optical devices to achieve high-bit-rate communications and long transmission distances. The following section describes the supported optical devices on the switches.

Important:

We recommend that you use the SFP and SFP+ transceivers documented in this document as they have been through extensive qualification and testing. Extreme Networks will not be responsible for issues related to third party transceivers.

Small Form-Factor Pluggable (SFP) Transceivers

SFPs are hot-swappable input and output enhancement components designed to allow gigabit Ethernet ports to link with other gigabit Ethernet ports over various media types.

You can use various SFP (1 Gbps) and SFP+ (10 Gbps) to attain different line rates and reaches. The following table describes the SFPs including the reach provided by various SFPs.

! Important:

The attainable cable length can vary depending on the quality of the fiber-optic cable used.

For more information about transceiver use and designation, see Extreme Networks Pluggable Transceivers Installation Guide.

Small Form-Factor Pluggable plus Transceivers

SFP+ transceivers are hot-swappable input and output enhancement components that allow 10 gigabit connections. All SFP+ transceivers use Lucent connectors (LC) to provide precision keying and low interface losses.

For more information about transceiver use and designation, see <u>Extreme Networks Pluggable Transceivers Installation Guide</u>.

Optical Power Considerations

When you connect the device to collocated equipment, ensure that enough optical attenuation exists to avoid overloading the receivers of each device. You must consider the minimum attenuation requirement based on the specifications of third-party equipment.

For more information about transceiver use and designation, see <u>Extreme Networks Pluggable</u> Transceivers Installation Guide.

Locating End of Sale Notices

To view the End of Sale notices, go to the Extreme Networks Website at https://extremeportal.force.com/.

Cable Requirements

The following table describes the cables required for ERS 4900 Series.

Table 13: Stacking cables

Description	Material code
Stacking cable 0.5 m	700511668
Stacking cable 1.5 m	700511669
Stacking cable 3.0 m	700511670
Stacking cable 5.0 m	700511671

Console port adapters

The following cables are used for installing the switch into a network.

Table 14: Console port adaptors

Name	Short Description	Material code
RJ-45/DB-9 Console Cable	1.5m cable with DB-9 Female for terminal/PC on one end and RJ-45 for device console port connectivity on the other.	AL2011022-E6
Blue DB-9 Male to RJ-45 Console Connector	Converts DB-9 of AL2011013-E6 console cable to RJ-45, a Category 5 RJ-45 straight cable	AL2011021-E6

Name	Short Description	Material code
	can then connect to RJ-45 console port.	
Red DB-9 Female to RJ-45 Adaptor	Converts DB-9 MALE to RJ-45 serial port. The adaptor can be used for PC or device with DB-9 MALE console port. Also, can be used with Category 5 RJ-45 straight cable to provide console connection.	AL2011020-E6

Stacking

The switch provides fail-safe stackability. You can connect up to eight ERS 4900 devices in a stack to provide uninterrupted connectivity for up to 400 ports. You can manage the stack as a single unit.

Connecting Switches in a Stack

About this task

Connect a switch to the next unit in the stack through a cascade cable. The stack parameters are associated with the base unit, the physical stack order depends on the base unit position and whether you configure the stack cascade up (stack up) or cascade down (stack down). This designation depends on the stack cabling arrangement.



Note:

Cascade Down configuration is recommended because many network management software packages assume a cascade down (stack down) configuration.

Before you begin

Order the appropriate ERS 4900 Series cascade cables to ensure fail-safe stacking. For more information, see Cable requirements on page 36.

Procedure

- 1. Ensure that all switches for the stack are rack mounted.
- 2. Slide the Unit Select switches on the back of the units to the appropriate position, depending on whether they are a base unit or non-base unit:
 - Base Unit (Unit 1)- Slide the Unit Select switch DOWN
 - Non-Base Unit (Units 2-8)- Slide the Unit Select switch UP

Note:

The Base Unit Select switch defaults to be in the Non-Base position. Only one switch in the stack must have the Base Unit Select switch set to the Base position.

3. Connect stacking cables as required for a Cascade Up (stack up) or Cascade Down (stack down) configuration.

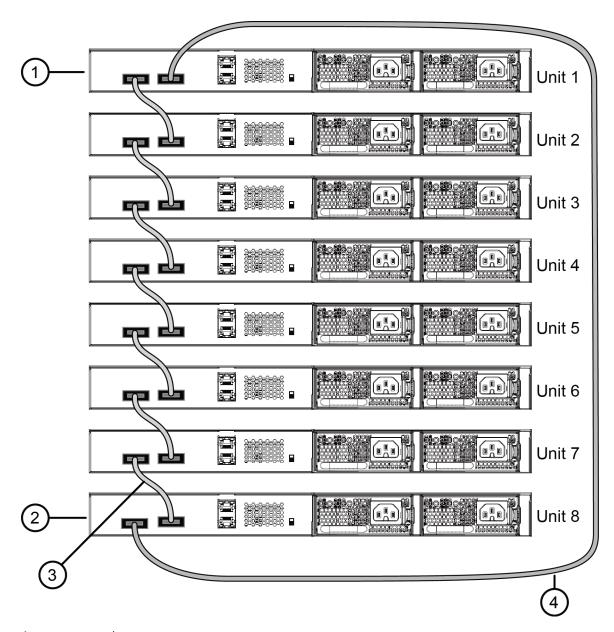
See Stack configurations on page 38 for cable connection reference.

Stack Configurations

Stack parameters are associated with the base unit, the physical stack order depends on the base unit position and whether you configure the stack cascade up (stack up) or cascade down (stack down). The designation depends on the stack cabling arrangement.

Cascade Down

In a cascade down configuration, the base unit is located at the top of the stack. The system automatically numbers the physical units based on the designated base unit (unit 1). The cable connected to the Cascade Down connector of the base unit terminates in the Cascade Up connector on the next unit in the stack, which is located below the base unit. This next unit is designated unit 2. The stack is wired downward through the units and the system continues to number in this manner throughout the stack. In this configuration, the base unit discovers the stack in a cascade down (stack down) direction.



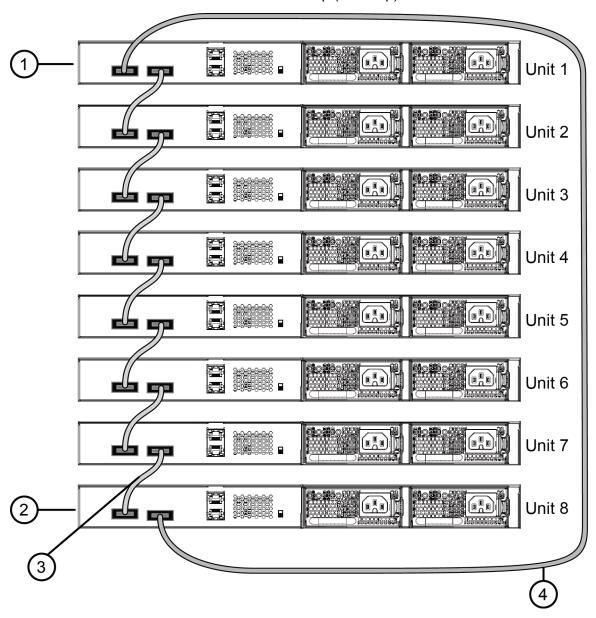
- 1. Base Unit
- 2. Last Unit
- 3. Cascade or Stack Cable
- 4. Cascade/Stack Cable (Return cable to make stack resilient. Use longer Stack Cable if required)

Figure 11: Cascade Down (Stack Down) configuration

Cascade Up

In a cascade up (stack up) configuration, the base unit is physically the bottom unit in the stack. The cable connected to the Cascade Up connector of the base unit terminates in the Cascade Down connector of the last unit physically at the top of the stack. The stack is wired upward through the

units and the system continues to number in this manner throughout the stack. In this configuration, the base unit discovers the stack in a cascade up (stack up) direction.



- 1. Base Unit
- 2. Last Unit
- 3. Cascade or Stack Cable
- 4. Cascade/Stack Cable (Return cable to make stack resilient. Use longer Stack Cable if required)

Figure 12: Cascade Up (Stack Up) configuration

Replacing or Adding a Stack Unit

Use the following procedure to replace a failed stack unit or insert a new unit into a stack.

Important:

Automatic Unit Replacement (AUR) for both configuration and software is enabled for all switch platforms and software releases. This means that the agent code image, on a replacement unit, is automatically upgraded or downgraded to match the software running on the stack. In addition, when a like-for-like replacement of a failed unit occurs, any port-specific configuration is restored.

Procedure

- 1. Remove the failed switch from the stack.
- 2. Obtain a like-for-like replacement switch.
- 3. With the new unit turned off, physically insert the new unit in the stack and reconnect the stack cables.
- 4. Turn on the new unit. Depending on the software load on the replacement switch, it can automatically restart one or two times before joining the stack as a fully operational member.
- 5. Check the log file on the stack to ensure that the replacement unit correctly joined the stack. The log file displays AUR information messages.

If you replace the base unit, remember that the stack has elected a temporary base unit and the new unit does not automatically assume the base unit status. Configure the new unit as the base unit, using the Unit Select switch, and reset the Unit Select switches of the other stack members to nonbase units.

Removing a Stack Unit

If you remove a unit from the stack (to operate in standalone mode), the following switch configuration settings revert to those configured before the unit became a member of the stack:

- · IP address
- Web, Telnet, and SNMP passwords
- SNMP community strings

Checking Light Emitting Diode on the Switch

The figures and tables in the following sections describe the LEDs on the switch. The tables describe LED operation for a switch that finishes the power-on self-test.

Switch LED State Indicators

The following table describes the main switch LED state indications provided by LED color and fluctuation cues.

Table 15: Switch LED state indicators

Label	Color and Status	Description	
PWR	Green (solid)	The switch is receiving power either from the primary or secondary power supply.	
	Off	The switch is not receiving power and not operating.	
Status	Green (solid)	During start-up: The power-on self-test (POST) is complete and the switch is operating normally.	
		After start-up: The switch is running the agent code successfully.	
	Green (blinking)	The switch is loading the agent software code.	
	Amber (solid)	The switch encountered an error when running the diagnostic software. (See note)	
	Amber (blinking)	The switch is booting and running diagnostic software. Normal activity during boot process. (See note)	
	Off	The switch failed the power-on self-test (POST) or failed to load the agent code.	
Up / Down	Green (solid)	The switch formed a neighbor with the adjacent switch over Stack up/down cables.	
	Green (blinking)	The switch formed a partial neighbor with the adjacent switch over Stack up/down cables. Check the switch logs.	
	Amber (solid)	The switch detects Stack up/down cables are present and connected to an adjacent switch, but adjacency did not complete. Check the switch logs.	
	Off	No Stack up/down connection is present, or the switch is in stand-alone mode.	
Base	Green (solid)	The switch is operating as the base unit for the stack.	
	Green (blinking)	The switch joined the stack and Automatic Unit Replacement is running to upgrade the diagnostics, agent, or configuration file.	
	Amber (solid)	The switch is operating as the temporary base unit for the stack.	
	Amber (blinking)	Problem with election of a base unit for the stack. Either no switch has the base unit switch on, or multiple units have the base unit switch on.	
	Amber (fast flashing)	The switch was not allowed to join the stack. Check the switch logs.	
	Off	The switch is not the base unit or temporary base unit, or the switch is operating in stand-alone mode.	

Port LED State Indicators

This section describes the port LED state indicators by color and fluctuation cues.

The following list describes the three port LEDs:

- Activity indicates the level of activity on the link.
- Link indicates the presence of an Ethernet link.
- Speed indicates the port speed (for example, 10 Mb/s, 100 Mb/s, 1000 Mb/s).

Table 16: RJ-45 Port LED state indicators

Label	Color and Status	Description	
Speed/PoE	Green, Pulse Green— Green	The port is set to operate at 1000 Mb/s and PoE is delivered on the PoE model port.	
	Green, Steady	The port is set to operate at 1000 Mb/s and no PoE power is delivered on the port, on non-PoE or PoE models without a PoE consumer attached to the port.	
	Amber, Pulse Amber— Amber	The port is set to operate at 100 Mb/s and PoE is delivered on the PoE model ports.	
	Amber, Steady	The port is set to operate at 1000 Mb/s and no PoE power is delivered on non-PoE switch ports or PoE switches without a PoE consumer attached to the port.	
	Amber, Green Pulse	The port is experiencing a PoE error.	
	Off	When the Link/Activity LED is green and the Speed LED is off, the port is set to operate at 10 Mb/s.	
Link / Activity	Green, Steady	The link established but no data activity exists.	
	Green, Blink	The link is established and data activity exists (the blink rate indicates the level of activity).	
	Green, Slow Blink	The software disabled the port.	
	Amber, Steady	Port not used.	
	Amber, Blink	Not applicable.	
	Off	The port has no link or activity.	

Table 17: SFP transceiver Port LED state indicators

Label	Color and Status	Description
In Use	Green, Blink	Not applicable.
	Green, Steady	The SFP port and the transmit port are active.
	Amber, Blink	Not applicable.
	Amber, Steady	SFP Installed—TX Port Inactive

Table continues...

Label	Color and Status	Description
	Off	No SFP transceiver is present.
Link / Activity	Green, Blink	Activity exists on the port.
	Green, Slow Blink	Software disabled this port.
	Green, Steady	The link is operating normally.
	Off	No link exists.

Table 18: SFP+ Port LED state indicators

Label	Color and Status	Description
TX / RX	Green, Steady	SFP+ detected and link established
	Green, Flashing	SFP+ established and transmit/receive activity detected.
	Amber, Steady	SFP detected and link established
	Amber, Flashing	SFP established and transmit/receive activity detected.
	Amber, Blinking	TX and RX blink together slowly to indicate a disabled port.
	Off	No SFP or SFP+ connection detected.

Note:

If you link two ports explicitly set for different speeds (for example one configured as 10BaseT and the other as 100BaseTX) the port link LED may indicate a link, but the switch does not establish a link. Connect ports using the same set speed or use auto-negotiation on each switch.

Chapter 6: Installation Reference

This section provides reference information for the ERS 4900 Series.

Console Port Pin Assignments

The following table describes the console port pin assignments.

Table 19: RJ-45 Console port pin assignments

Connector	Pin Number	Signal
12345678	1	Ready to send (RTS) — optional
	2	Data terminal ready (DTR) — optional, can swap or link with pin 8
111111111	3	Transmit data (TXD) — mandatory
	4	Carrier detect (DCD) — optional
	5	Ground (GND) — mandatory
	6	Receive data (RXD) — mandatory
	7	Data set ready (DSR) — optional
	8	Clear to send (CTS) — optional, can swap or link with pin 1

RJ-45 Connector Pin Assignments for PoE Switches

The following table describes the Power over Ethernet, and Power over Ethernet Plus RJ-45 connector pin assignments in ERS 4950GTS-PWR+ and ERS 4926GTS-PWR+.

Table 20: PWR+ RJ-45 connector pin assignments

Connector	Pin Number	Signal	Description
	1	RX+/power-	Receive Data+/power-
	2	RX-/power-	Receive Data-/power-
87854321	3	TX+/power+	Transmit Data+/power+
P4n4EA	4	Not applicable	Not applicable
	5	Not applicable	Not applicable
	6	TX-/power+	Transmit Data-/power+
	7	Not applicable	Not applicable
	8	Not applicable	Not applicable

Chapter 7: Translations of safety Messages

This module contains translations of the safety messages found in the ERS 4900 Series documentation suite.

Safety Messages



Caution:

When mounting this device in a rack, do not stack units directly on top of one another in the rack. Each unit must be secured to the rack with appropriate mounting brackets. Mounting brackets are not designed to support multiple units.

Important:

Achtung: Wenn diese Einheit in einem Rack montiert wird, muß ein gewisser Abstand zur nächsten Einheit gelassen werden. Jede Einheit muß mit geeignetem Befestigungsmaterial gesichert werden. Das Befestigungsmaterial ist nicht für die gleichzeitige Befestigung mehrerer Einheiten geeignet.

Important:

Si vous installez le module dans une baie, ne l'empilez pas directement sur un autre. Chaque module doit être fixé à sa propre baie à l'aide des supports de montage appropriés. Ces supports ne sont pas conçus pour résister à plusieurs modules.

Important:

Precautión: Cuando monte este dispositivo en un bastidor, no apile las unidades directamente una encima de otra. Cada unidad debe fijarse en el bastidor con las abrazaderas de montaje adecuadas. Las abrazaderas de montaje no están diseñadas para sostener varias unidades.

Important:

Se il dispositivo viene installato in un rack, non impilare le unità direttamente una sull'altra. Ogni unità deve essere fissata al rack con le staffe di montaggio appropriate. Le staffe di montaggio non sono state progettate per supportare più unità.



警告: 在机架中安装此设备时,请勿将多个部件叠放在机架中。必须用合适的 安装托架将各个部件固定在机架中。安装托架无法支撑多个部件。



注意:この装置をラックに設置する場合は、ラック内のコニットを直接積み重 ねないようにしてください。各コニットは専用の取り付けブラケットでラック に固定する必要があります。取り付けプラケットは複数のユニットを支えるよ うには設計されていません。



注意:在機箱中掛載此裝置時,請不要直接在機箱中的另一個裝置上直接堆放裝置。 每一装置都必须使用適當的掛載托架以固定在機架中。掛載托架不能用來支撐多個 裝置。

Caution:

If you are not installing a module in the slot, be sure to keep the metal cover plate in place over the slot. Removing the cover plate impedes airflow and proper cooling of the unit.

Important:

Achtung: Wenn Sie kein Modul im Schacht verwenden, muß die Metallabdeckung über dem Schacht montiert sein. Eine Entfernung der Abdeckung führt zu einer Verschlechterung der Luftzirkulation und damit zu einer nicht ausreichenden Kühlung der Einheit.

Important:

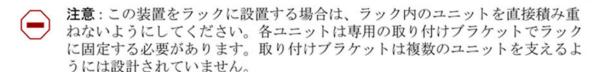
Si vous n'installez pas le module dans une baie, veillez à laisser la plaque métallique sur la baie. Si vous la retirez, l'aération du module ne peut pas s'effectuer correctement.

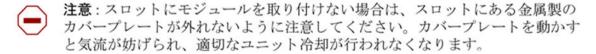
Important:

Precaution: Si no instala ningún módulo en la ranura, asegúrese de mantener la placa de la cubierta de metal en la misma. Si la retira, impedirá que el aire circule y la unidad se refrigere adecuadamente.

Important:

Attenzione: Se nello slot non vengono installati moduli, assicurarsi di mantenere la piastra di copertura metallica in sede sopra lo slot. La rimozione della piastra impedisce la ventilazione e il corretto raffreddamento dell'unità.





警告:如果您不打算在该插槽中安装任何模块,请务必使金属盖板正确地盖住 该插槽。如果取下盖板,将妨碍通风及部件散热。



注意:如果您未在插槽中安裝模組,請確定金屬殼板正確地蓋在插槽上。移除殼板 會阻礙空氣流通以及裝置的適當冷卻度。



警告:若要關閉此裝置的電源,拔掉插頭是唯一的方法。爲了因應緊急狀況,請將 電源線連接到可以快速插拔的地方。

Warning:

Disconnecting the AC power cord is the only way to turn off AC power to this device. Always connect the AC power cord in a location that can be reached guickly and safely in case of an emergency.

Important:

Warnung: Das Gerät kann nur durch Ziehen des Netzsteckers ausgeschaltet werden. Schließen Sie das Netzkabel an einer Steckdose an, die in Notfällen schnell und sicher zugänglich ist.

Important:

Avertissement: Pour mettre le module hors tension, vous devez impérativement déconnecter le cordon d'alimentation. En outre, vous devez dégager un espace minimal dans la zone de câblage pour pouvoir y accéder facilement en cas d'urgence.



警告: 断开交流电源线是切断本设备的交流电源的唯一方法。交流电源线一定要 连接到在紧急时刻可以快速安全地接触到的位置。

Important:

Advertencia: Para apagar el dispositivo debe desenchufar el cable. Conecte siempre el cable de alimentación a una toma segura y de fácil acceso por si se produjera alguna situación de emergencia.

Important:

Avviso: L'unico modo per disattivare questo dispositivo consiste nello scollegare il cavo di alimentazione. Collegare sempre il cavo di alimentazione ad una presa che sia facilmente e rapidamente accessibile in caso di emergenza.

🛕 Danger:

Use only power cords that have a grounding path. Without a proper ground, a person who touches the switch is in danger of receiving an electrical shock. Lack of a grounding path to the switch may result in excessive emissions.

Important:

Vorsicht: Verwenden Sie nur Netzkabel mit Schutzerdung. Ohne ordnungsgemäße Schutzerdung besteht für Personen, die den Switch berühren, die Gefahr eines elektrischen Schlages. Eine nichtvorhandene Schutzerdung kann zu sehr starken Abstrahlungen führen.

A Danger:

N'utilisez que des cordons d'alimentation équipés de trajet de mise à la terre. Sans mise à la terre adaptée, vous risquez de recevoir une décharge électrique en touchant le commutateur. Par ailleurs, l'absence de trajet de mise à la terre peut générer des émissions excessives.

Important:

Peligro: Utilice únicamente cables de alimentación con toma de tierra. De lo contrario, al tocar el interruptor puede recibir una descarga eléctrica. Si no hay un circuito de toma de tierra en el enchufe, puede producirse un exceso de emisiones.

! Important:

Pericolo: Utilizzare esclusivamente cavi di alimentazione dotati di un percorso per la messa a terra. Senza un'adequata messa a terra, chiunque tocchi lo switch corre il rischio di ricevere una scossa elettrica. L'assenza di un percorso per la messa a terra verso lo switch può comportare un eccesso di emissioni.



危険:接地経路を持つ電源コードを必ず使用するようにしてください。適切な 接地がない状態でスイッチに触ると、感電する危険性があります。また、ス イッチへの接地経路がないと、過度な放電を引き起こす可能性があります。



危险:请仅使用接地的电源线。如果电源线不接地或接地不当,接触交换机 的人员可能会受到电击。如果交换机不接地,则可能导致放电过量。

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