



Installing Avaya Ethernet Routing Switch 4900 Series

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Contents

Chapter 1: Introduction	4
Purpose.....	4
Related resources.....	4
Searching a documentation collection.....	5
Subscribing to e-notifications.....	6
Support.....	8
Chapter 2: New in this document	9
Chapter 3: Preinstallation checklist	10
Chapter 4: Installing Ethernet Routing Switch 4900 Series	12
Installation checklist.....	12
Ethernet Routing Switch 4900 Series models.....	12
Common hardware features.....	14
Electrostatic discharge prevention.....	15
Technical specifications.....	16
Power specifications.....	17
MTBF values.....	19
AC power cord specifications.....	20
Universal Serial Bus ports.....	21
Connector pin assignments.....	21
RJ-45 connector pin assignments for PoE switches.....	21
Console port pin assignments.....	22
Equipment requirement.....	22
Verifying the package contents.....	22
Cable requirements.....	25
Switch installation.....	26
Installing the switch in an equipment rack.....	26
Installing optional four-post rack-mount brackets.....	30
Installing the secondary power supply.....	34
Connecting switch to AC power.....	35
Connecting a transceiver to the switch or switch stack.....	35
Installing SFP transceivers.....	36
Removing of SFP transceivers.....	37
Supported optical devices	38
Stacking.....	42
Connecting switches in a stack.....	46
Stack configurations.....	46
Replacing or adding a stack unit.....	49
Removing a stack unit.....	49
Checking Light Emitting Diode on the switch.....	49

Switch LED state indicators.....	50
Port LED state indicators.....	51
Appendix A: Translations of safety messages.....	53
Safety messages.....	53

Chapter 1: Introduction

Purpose

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

Unless otherwise indicated, this information applies to:

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

Related resources

Documentation

For a list of the documentation for this product and more information about documents on how to configure other switch features, see *Documentation Reference for Avaya Ethernet Routing Switch 4900 and 5900 Series*, NN47211-103.

For more information on new features of the switch and important information about the latest release, see *Release Notes for Avaya Ethernet Routing Switch 4900 and 5900 Series*, NN47211-400.

For more information about how to configure security, see *Configuring Security on Avaya Ethernet Routing Switch 4900 and 5900 Series*, NN47211-505.

For the current documentation, see the Avaya Support web site: www.avaya.com/support.

Training

Ongoing product training is available. For more information or to register, see <http://avaya-learning.com/>.

Enter the course code in the **Search** field and click **Go** to search for the course.

Course code	Course title
8D00020E	Stackable ERS and VSP Products Virtual Campus Offering

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

Procedure

- To find videos on the Avaya Support website, go to <http://support.avaya.com> and perform one of the following actions:
 - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.
 - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.
- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and perform one of the following actions:
 - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
 - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

Note:

Videos are not available for all products.

Searching a documentation collection

On the Avaya Support website, you can download the documentation library for a specific product and software release to perform searches across an entire document collection. For example, you can perform a single, simultaneous search across the collection to quickly find all occurrences of a particular feature. Use this procedure to perform an index search of your documentation collection.

Before you begin

- Download the documentation collection zip file to your local computer.
- You must have Adobe Acrobat or Adobe Reader installed on your computer.

Procedure

1. Extract the document collection zip file into a folder.
2. Navigate to the folder that contains the extracted files and open the file named `<product_name_release>.pdx`.
3. In the Search dialog box, select the option **In the index named `<product_name_release>.pdx`**.
4. Enter a search word or phrase.
5. Select any of the following to narrow your search:
 - Whole Words Only
 - Case-Sensitive
 - Include Bookmarks
 - Include Comments
6. Click **Search**.

The search results show the number of documents and instances found. You can sort the search results by Relevance Ranking, Date Modified, Filename, or Location. The default is Relevance Ranking.

Subscribing to e-notifications

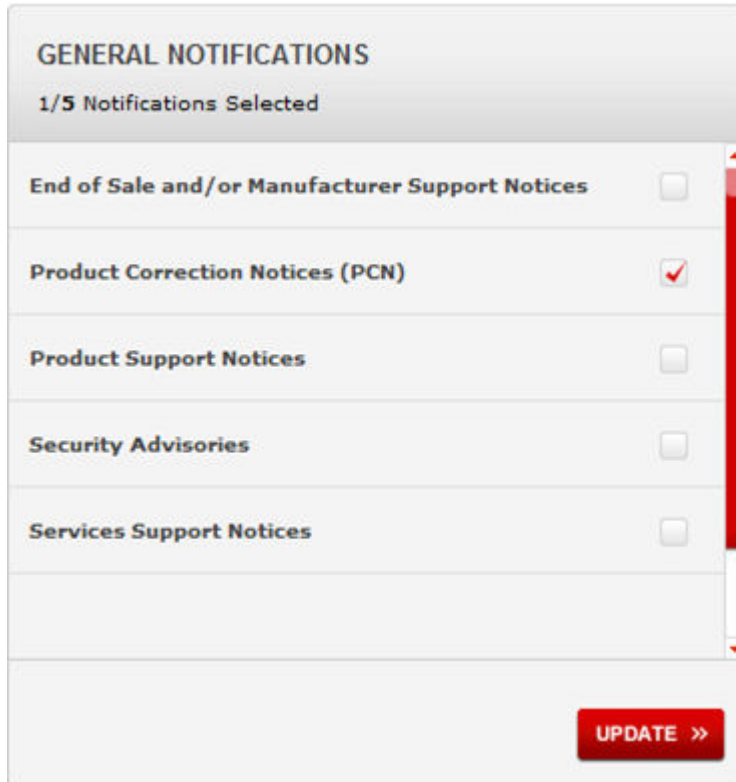
Subscribe to e-notifications to receive an email notification when documents are added to or changed on the Avaya Support website.

About this task

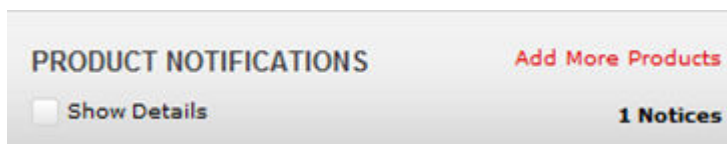
You can subscribe to different types of general notifications, for example, Product Correction Notices (PCN), which apply to any product or a specific product. You can also subscribe to specific types of documentation for a specific product, for example, Application & Technical Notes for Virtual Services Platform 7000.

Procedure

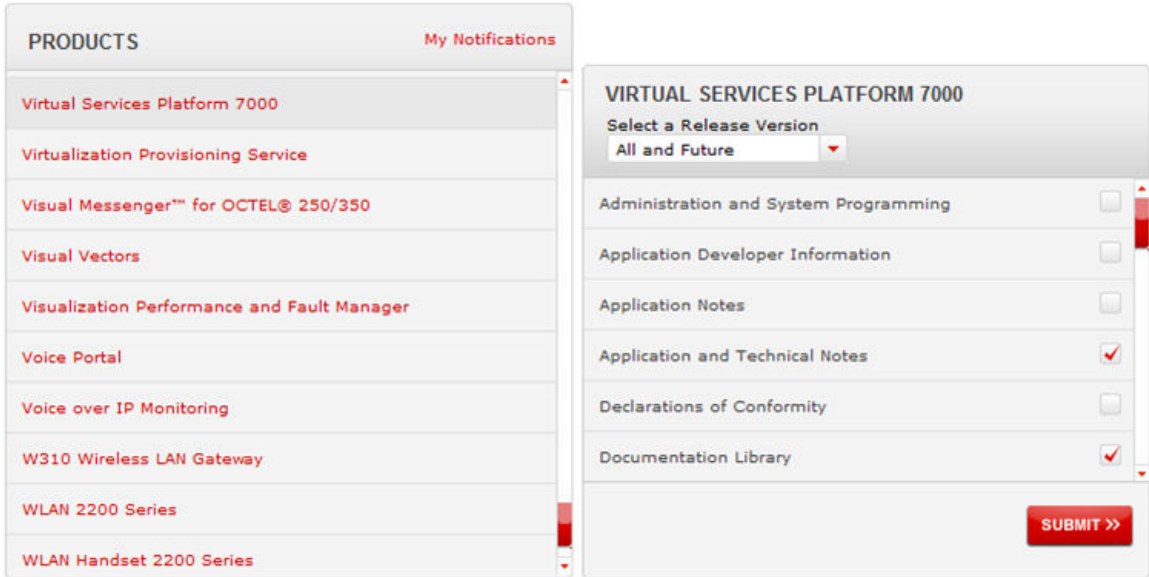
1. In an Internet browser, go to <https://support.avaya.com>.
2. Type your username and password, and then click **Login**.
3. Under **My Information**, select **SSO login Profile**.
4. Click **E-NOTIFICATIONS**.
5. In the GENERAL NOTIFICATIONS area, select the required documentation types, and then click **UPDATE**.



6. Click **OK**.
7. In the PRODUCT NOTIFICATIONS area, click **Add More Products**.



8. Scroll through the list, and then select the product name.
9. Select a release version.
10. Select the check box next to the required documentation types.



11. Click **Submit**.

Support

Go to the Avaya Support website at <http://support.avaya.com> for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Chapter 2: New in this document

There is no changes for Release 7.2 in *Installing Avaya Ethernet Routing Switch 4900 Series*, NN47212-301.

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: <ul style="list-style-type: none"> • Phillips #2 screwdriver RJ-45 console port cable • ESD cable 	See Cable requirements on page 25.	
4.	Unpack the equipment.	Observe ESD precautions when you unpack the equipment. See Electrostatic discharge prevention on page 15.	
5.	Verify the contents of the shipped package.	See Verifying package contents on page 22 for a description of the components that are provided with the switch. If any components are missing, contact Avaya support at https://support.avaya.com/ .	
6.	Make sure that the power cord has the correct country-specific termination.	See AC power cord specifications on page 20.	
7.	Prepare the rack.	Ensure that there is enough rack space of 1.75 inches (4.45 centimeters). 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	

Table continues...

No.	Task	Description	✓
		<p>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.</p> <p>See Installing the switch in an equipment rack on page 26.</p>	

Chapter 4: Installing Ethernet Routing Switch 4900 Series

This chapter provides the information and procedures to install the Ethernet Routing Switch 4900 Series.

Installation checklist

Use this checklist to install the Ethernet Routing Switch 4900 Series.

No.	Task	Description	✓
1.	Mount the Ethernet Routing Switch 4900 Series in the equipment rack.	To install the switch, see Installing the Switch in an equipment rack on page 26. To install the switch using optional four-post rack-mount brackets, see Installing optional four post rack mount brackets on page 30.	
3.	Check the LEDs to verify the installation.	See Switch LED state indicators on page 50	
2.	(Optional) Install the secondary power supply.	See Installing the secondary power supply on page 34	
4.	(Optional) Connect the switches in a stack.	See Connecting switches in a stack on page 46	

Ethernet Routing Switch 4900 Series models

This section provides information about the switches in Ethernet Routing Switch 4900 Series.

Ethernet Routing Switch 4900 Series models

The following table lists the different Ethernet Routing Switch 4900 Series models and the key features for each switch.





Switch Model	Key features	Part Number
Ethernet Routing Switch 4926GTS	<ul style="list-style-type: none"> • 24 ports, 10/100/1000 Base-T Ethernet with two ports of SFP+ (10 Gbps) interfaces • 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 	AL4900x01-E6  Note: Replace the “x” with a country-specific power cord code. See the footnote for details.
Ethernet Routing Switch 4926GTS-PWR+	24 ports 10/100/1000BaseT 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	AL4900x02-E6  Note: Replace the “x” with a country-specific power cord code. See the footnote for details.
Ethernet Routing Switch 4950GTS	48 ports 10/100/1000BaseT Stackable Ethernet switch Non-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	AL4900x03-E61  Note: Replace the “x” with a country-specific power cord code. See the footnote for details.
Ethernet Routing Switch 4950GTS-PWR+	48 ports 10/100/1000BaseT 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	AL4900x04-E6  Note: Replace the “x” with a country-specific power cord code. See the footnote for details.
<p>*Note: The character (x) in the order number indicates the power cord code. Replace the “x” with the proper letter to indicate desired product nationalization. See the following for details:</p> <p>“A”: No power cord included.</p> <p>“B”: Includes European “Schuko” power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden.</p>		

Table continues...

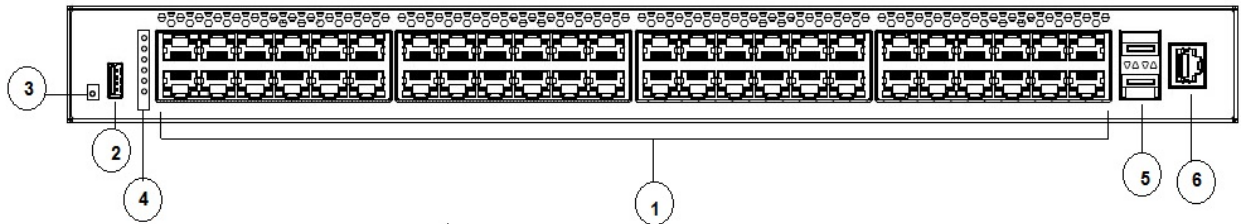
Switch Model	Key features	Part Number
"C": Includes power cord commonly used in the United Kingdom and Ireland. "D": Includes power cord commonly used in Japan. "E": Includes North American power cord. "F": Includes Australian power cord.		
Depending on the switch model, a 250 W or 1025 W PSU and .5 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

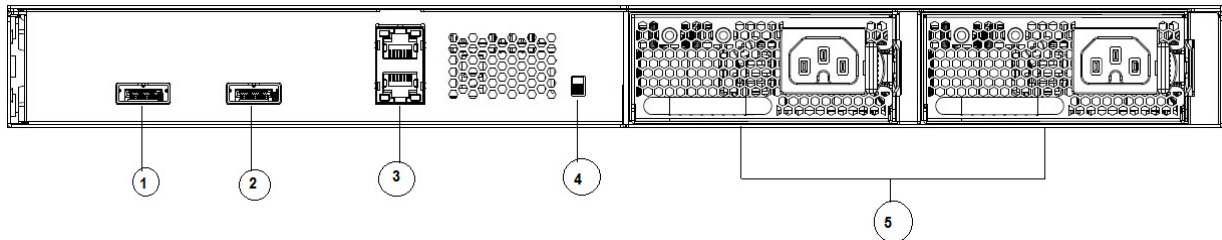
- Rear panel:
 - two stack connectors
 - one Base Select switch
 - ports

*** 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

Electrostatic discharge prevention

This module provides information and procedures for the prevention of electrostatic discharge during the installation process.

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 Avaya Ethernet Routing 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, Avaya recommends that the use of an ESD discharge cable to reduce the potential for damage from static that can build up in cables. See the following figure.

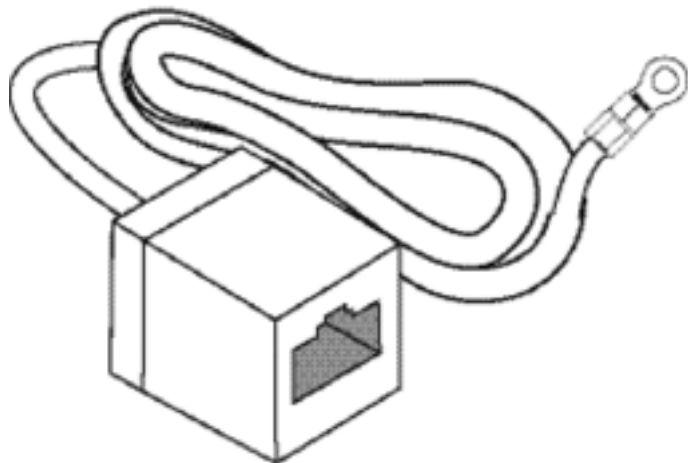


Figure 3: ESD cable

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.

⚠ Warning:

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

Table 1: 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)	<ul style="list-style-type: none"> • ERS4926GTS: 7.2 kg • ERS4926GTS-PWR+: 7.9 kg • ERS4950GTS: 7.3 kg • ERS4950GTS-PWR+: 8.0 kg

Table 2: 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	<ul style="list-style-type: none"> • 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+ specifications](#) on page 19

The following table describes the AC power specifications.

Table 3: AC power specifications

Model	Number of Power supplies	Power supply		Input power (margined by 10%)		Thermal rating (BTUs/hr maximum)
		Rated	Line voltage	Watts (Total)	Amps	
ERS 4950GTS	1	250 W	200–240 VAC	53.14	0.30	181.31

Table continues...

Model	Number of Power supplies	Power supply		Input power (margined by 10%)		Thermal rating (BTUs/hr maximum)
		Rated	Line voltage	Watts (Total)	Amps	
	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-PWR+	1	1025 W	200–240 VAC	820.89	3.80	358.90
	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-PWR+	1	1025 W	200–240 VAC	792.53	3.57	308.88
	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 4: 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 Avaya 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 5: PoE+ specifications

Model	Number of Power Supplies	Power supply		Power over Ethernet (PoE+) power output		
		Rated	Line voltage	Max Power per Port (Watts)	Max power output Sum of all Ports (Watts)	
ERS 4950GTS-PWR+	1	1025 W	200–240 VAC	30 W	720 W	24 ports at 30 W
	2	1025 W	200–240 VAC	30 W	1440 W	48 ports at 30 W
	1	1025 W	100–110 VAC	30 W	720 W	24 ports at 30 W
	2	1025 W	100–110 VAC	30 W	1440 W	48 ports at 30 W
ERS 4926GTS-PWR+	1	1025 W	200–240 VAC	30 W	720 W	24 ports at 30 W
	2	1025 W	200–240 VAC	30 W	720 W	24 ports at 30 W
	1	1025 W	100–110 VAC	30 W	720 W	24 ports at 30 W
	2	1025 W	100–110 VAC	30 W	720 W	24 ports at 30 W

MTBF values

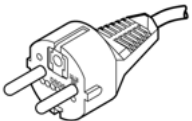
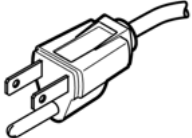
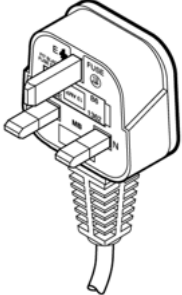
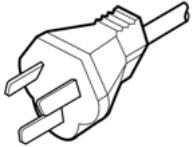
The following table lists the MTBF values for the switches in ERS 4900 Series in combination with one or two PSUs.

Model	Number of PSUs	Power Supply rating	MTBF (hours)
4926GTS	1	250W	212,509
	2	250W	191,705
4926GTS-PWR+	1	1025W	211,044
	2	1025W	197,295
4950GTS	1	250W	199,834
	2	250W	181,329
4950GTS-PWR+	1	1025W	195,578
	2	1025W	183,714

AC power cord specifications

The following section outlines the AC power cord specifications for various countries. Ensure that you use the correct cord for your location.

Table 6: International power cord specifications

Country / Plug Specification	Specifications	Typical Plug
Continental Europe: <ul style="list-style-type: none"> • CEE7 standard VII male plug • Harmonized cord (HAR marking on the outside of the cord jacket to comply with the CENELEC Harmonized Document HD-21) 	<ul style="list-style-type: none"> • 220 or 230 VAC • 50 Hz • Single Phase 	 <p style="text-align: right;">228FA</p>
United States of America / Canada / Japan: <ul style="list-style-type: none"> • NEMA5-15P male plug • UL-recognized (UL stamped on cord jacket) • CSA-certified (CSA label secured to the cord) 	<ul style="list-style-type: none"> • 100 or 120 VAC • 50 - 60 Hz • Single Phase 	 <p style="text-align: right;">227FA</p>
United Kingdom: <ul style="list-style-type: none"> • BS1363 male plug with fuse • Harmonized cord 	<ul style="list-style-type: none"> • 240 VAC • 50 Hz • Single Phase 	 <p style="text-align: right;">229FA</p>
Australia: <ul style="list-style-type: none"> • AS3112-1981 male plug 	<ul style="list-style-type: none"> • 240 VAC • 50 Hz • Single Phase 	 <p style="text-align: right;">230FA</p>

Universal Serial Bus ports

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.


Connector pin assignments

The following section describes the connector pin assignments.

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 7: PWR+ RJ-45 connector pin assignments

Connector	Pin Number	Signal	Description
 <p>8785432 1 04662A</p>	1	RX+/power-	Receive Data+/power-
	2	RX-/power-	Receive Data-/power-
	3	TX+/power+	Transmit Data+/power+
	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

Console port pin assignments

The following table describes the console port pin assignments.

Table 8: RJ-45 Console port pin assignments

Connector	Pin Number	Signal
	1	Ready to send (RTS) — optional
	2	Data terminal ready (DTR) — optional, can swap or link with pin 8
	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

Equipment requirement

After unpacking this switch, check the contents to be that sure you have received all the components. Then, before beginning the installation, be sure that you have all other necessary installation equipment.

Verifying the package contents

For each Ethernet Routing Switch 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.

Table 9: Package contents

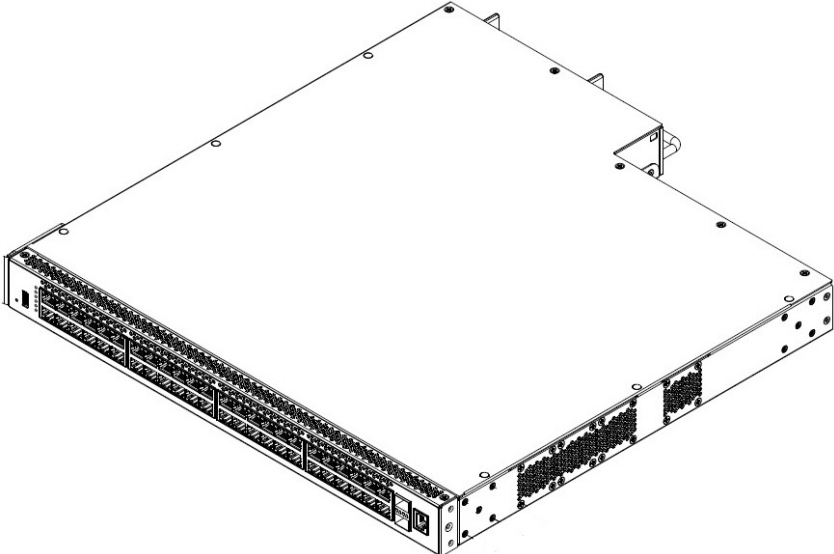
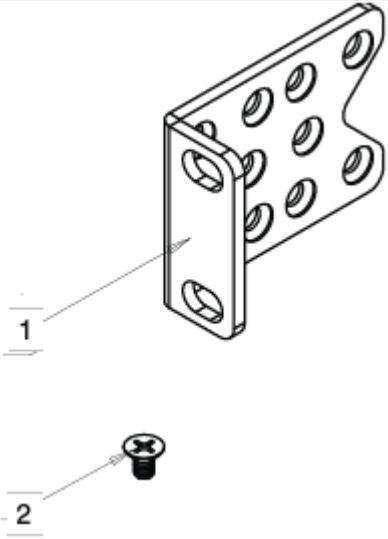
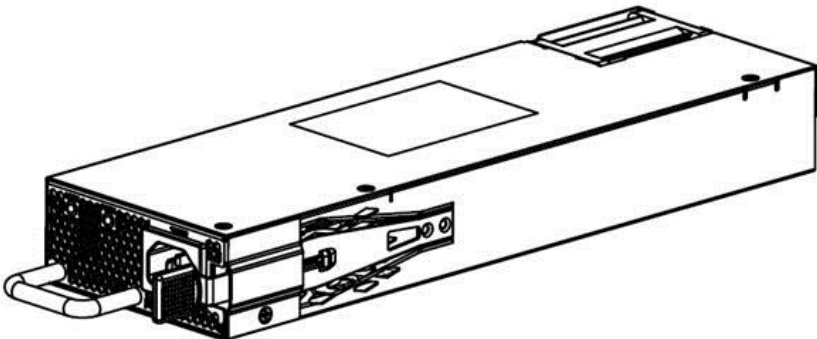
Item description	Image
Avaya Ethernet Routing Switch	
Rack-mounting hardware	 <p data-bbox="630 1444 1182 1520"> 1. Rack mount brackets — Quantity: 2 2. M4 (8.5 mm) flat head screws — Quantity: 8 </p>
Country-specific AC power cord * Note: A power cord is not included for the A variant of the switch.	For information, see AC power cord specifications on page 20.
Stacking cable 0.5 m	

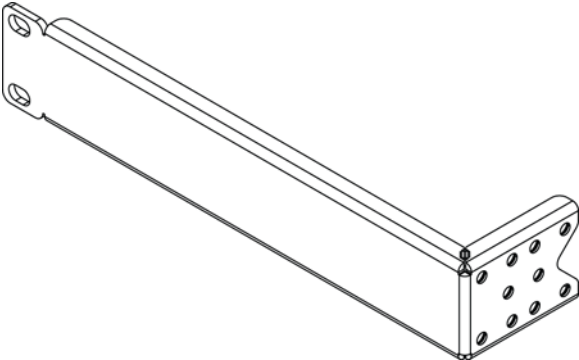
Table continues...

Item description	Image
One field replaceable power supply module (two power supplies are supported for models)	
Documentation including the Quick Install poster and Regulatory document	
Base Software License Kit	

Optional rack-mounting equipment

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

Table 10: Optional equipment

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

Power Supply Unit specifications

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

Table 11: PSU specifications

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

Table continues...

Switch Model	Primary PSU	Optional Secondary PSU
	(replacement 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)

Cable requirements

The following table describes the cables required for Ethernet Routing Switch 4900 Series.

Table 12: 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 13: Console port adaptors

Name	Short Description	Material code
Avaya 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
Avaya 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 can then connect to RJ-45 console port.	AL2011021-E6
Avaya 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

Switch installation

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

Installing the switch in an equipment rack

You can install the switch by mounting them at front or rear positions.

 **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 [Translations and Safety messages](#) on page 53.

 **Note:**

Your switch might appear different than the following example figures. The instructions in this section apply to all switches in Ethernet Routing Switch 4900 Series.

About this task

Install the switch 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

- Ensure that you have a space of 1.75 inches (4.45 centimeters) in height for each switch in an EIA or IEC-standard 19-inch (48.2-centimeter) equipment rack.
- The rack is bolted to the floor and braced if necessary.
- 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.

 **Note:**

Avaya does 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 53.

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.

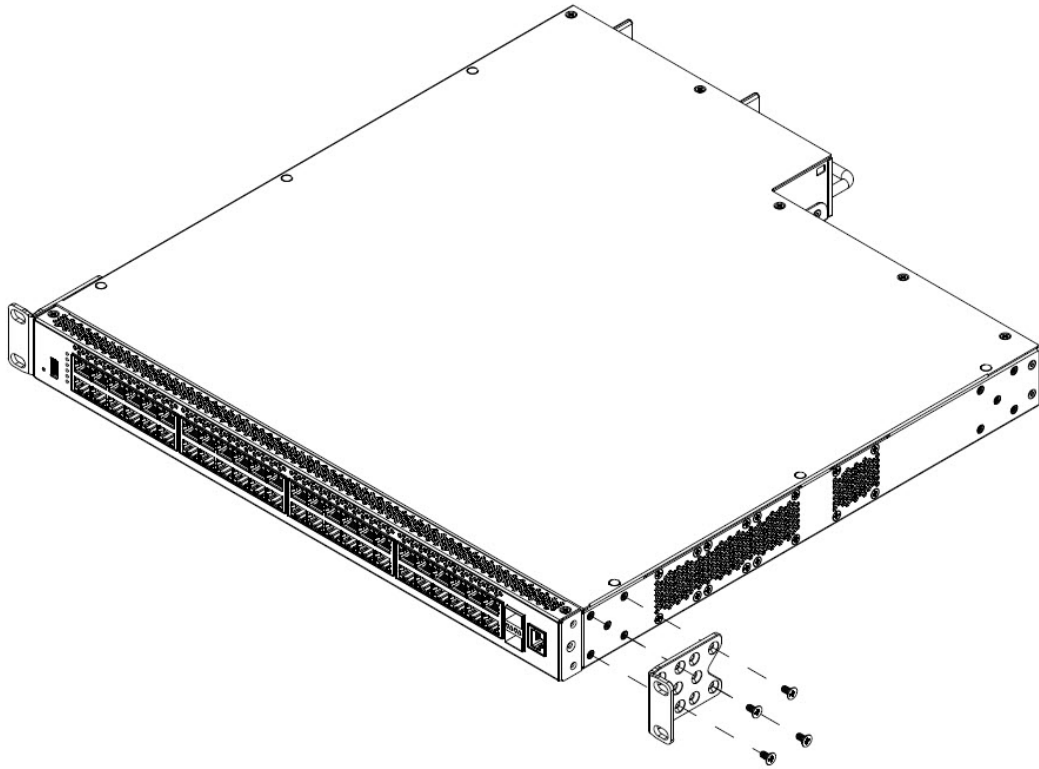


Figure 4: Front-mounted rack bracket installation

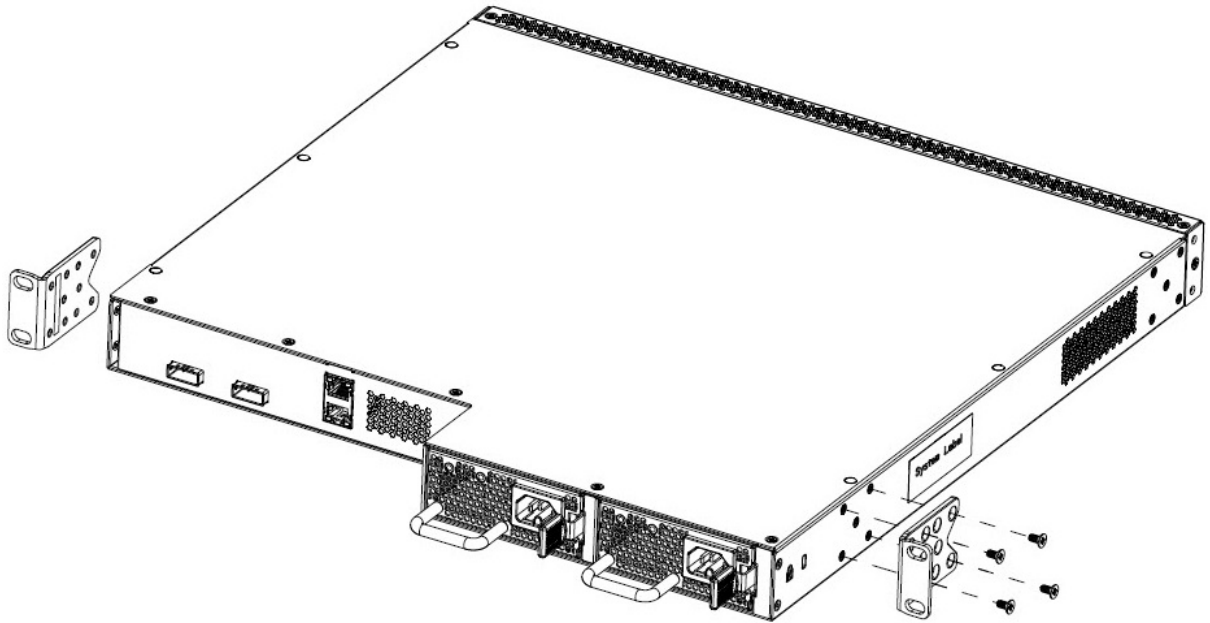


Figure 5: Rear-mounted rack bracket installation

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

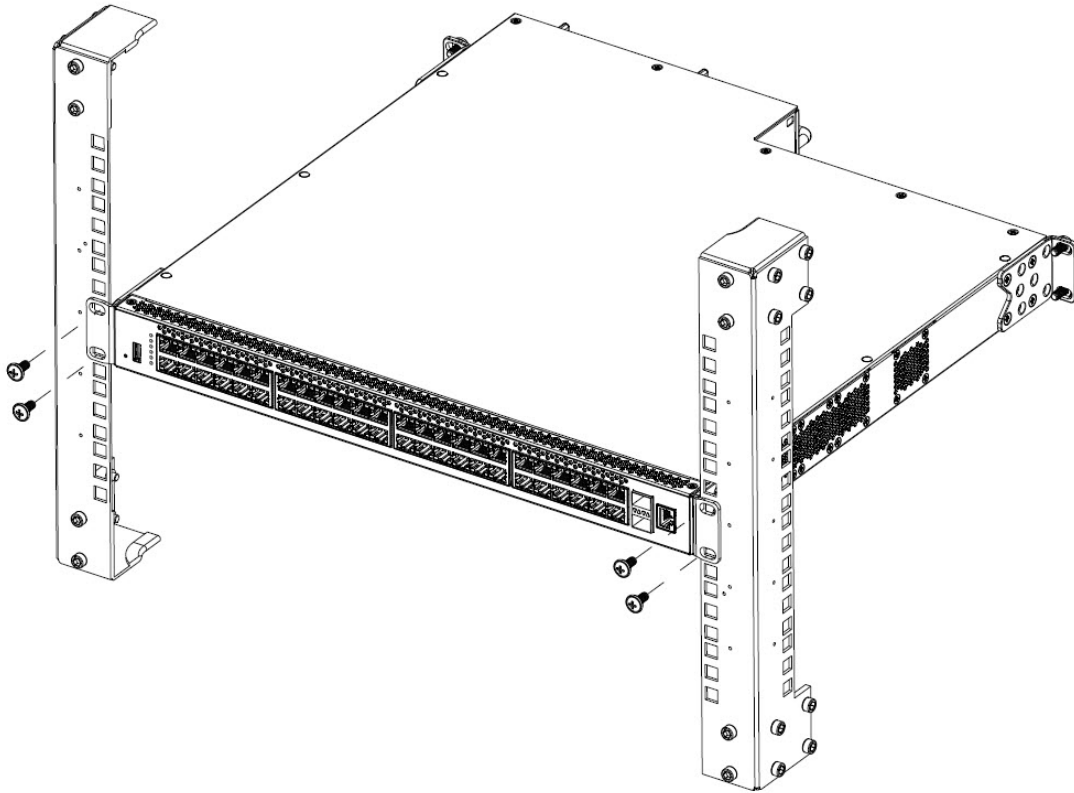


Figure 6: Front-mounted rack installation

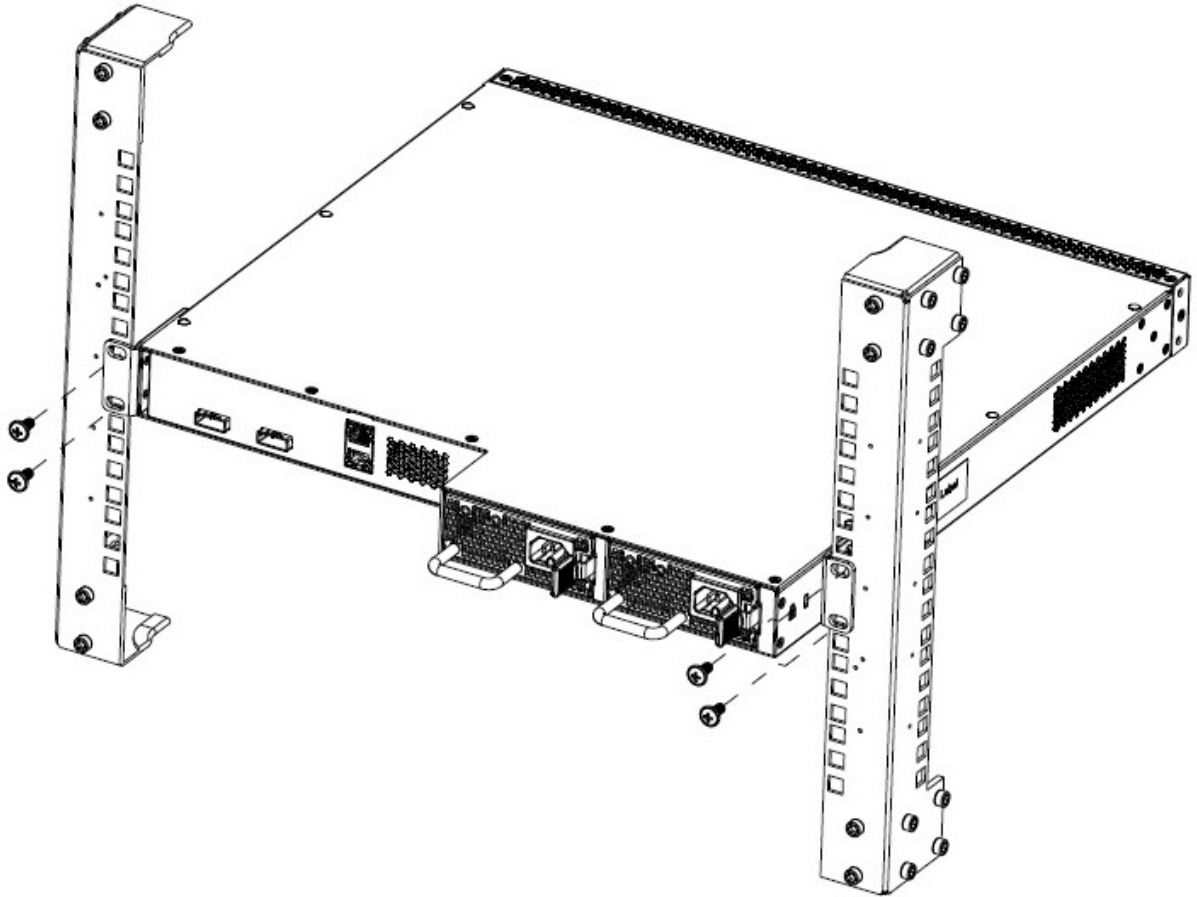


Figure 7: Rear-mounted rack bracket installation

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:
 - Space of 2.8 inches (7.1 centimeters) for each switch in an E1A or 1EC standard 19 inch (48.2 centimeter) equipment rack and T1A 23 inch (58.5 centimeter) equipment rack.

- 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.

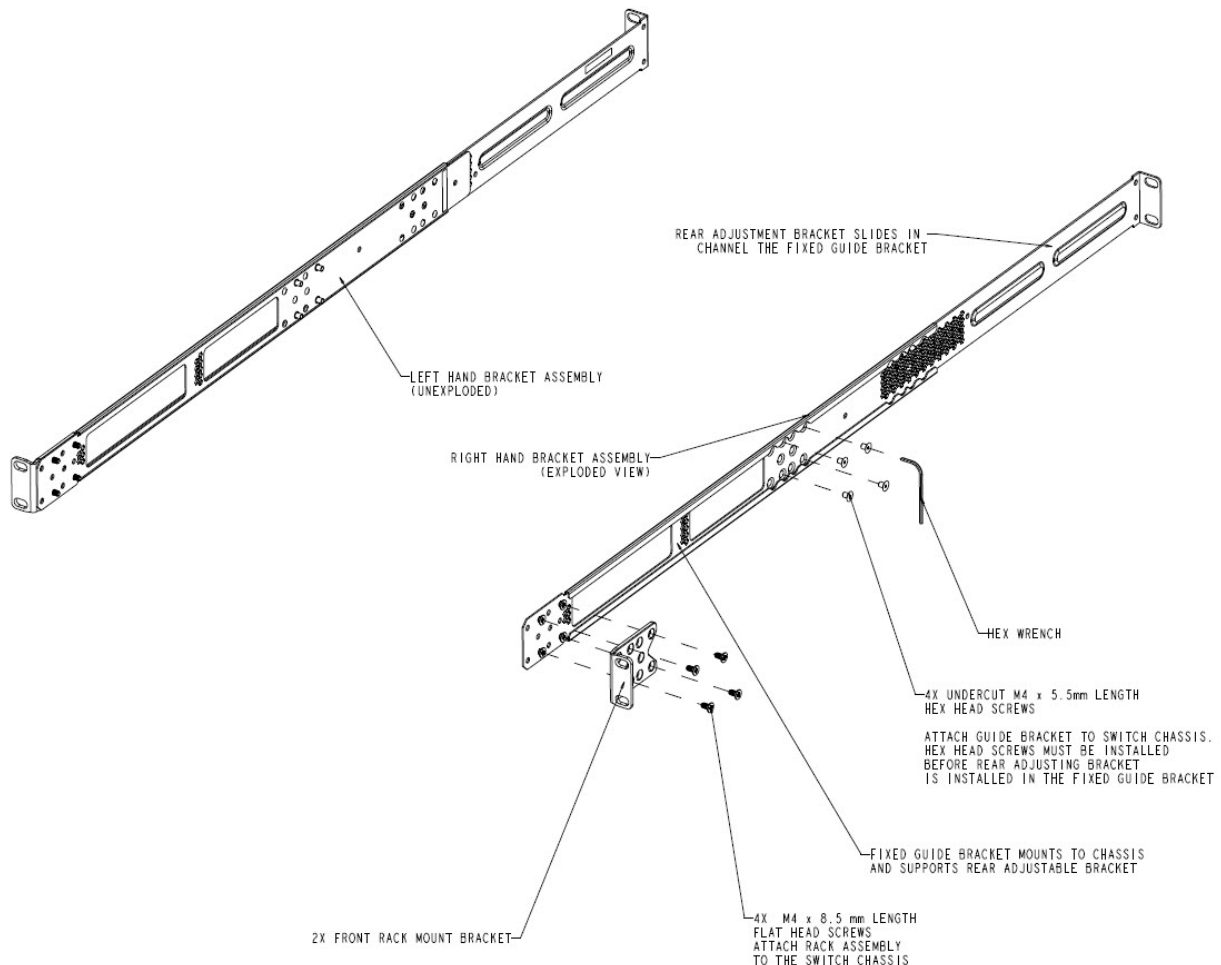
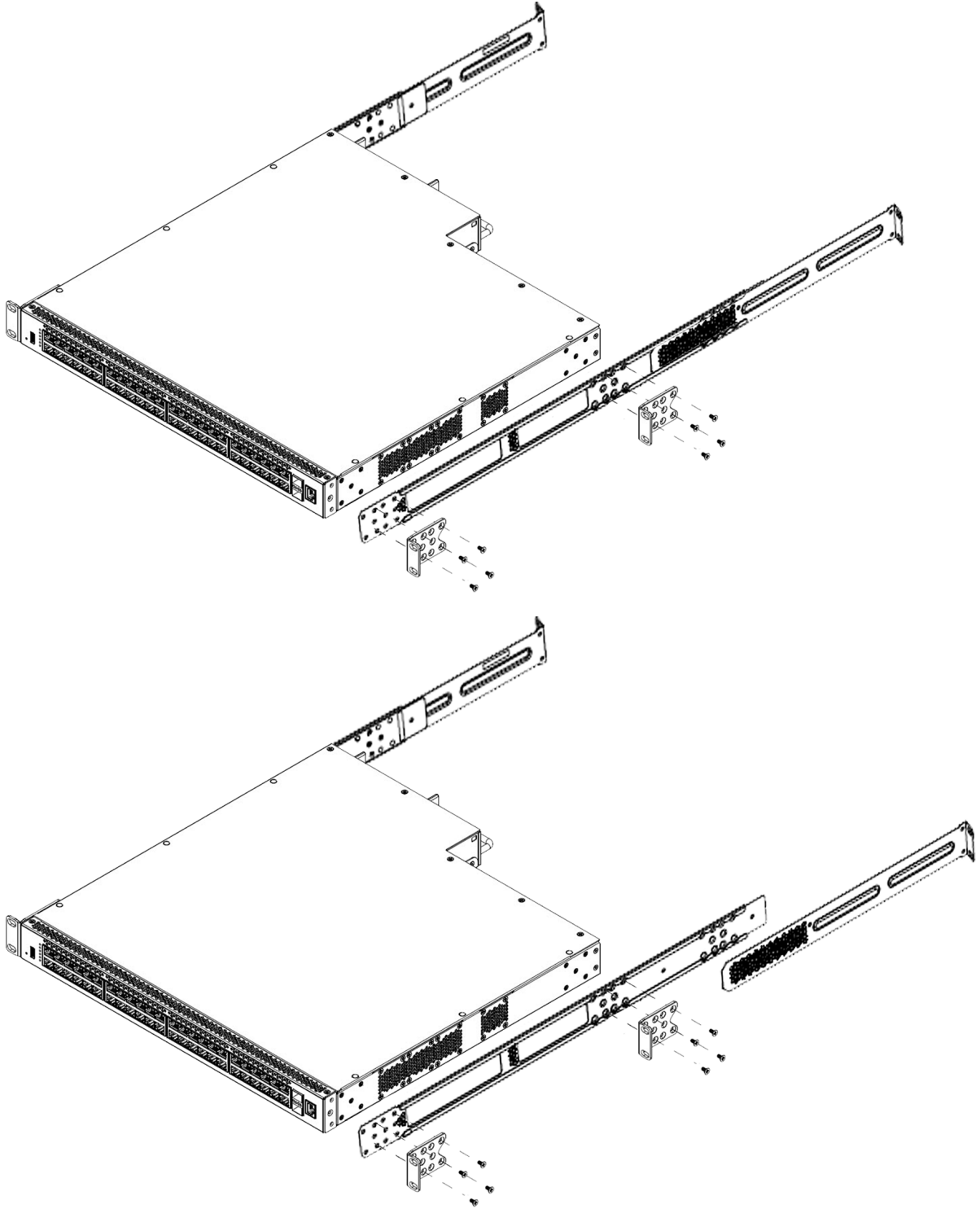


Figure 8: Four-post rack-mount kit assembly

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.

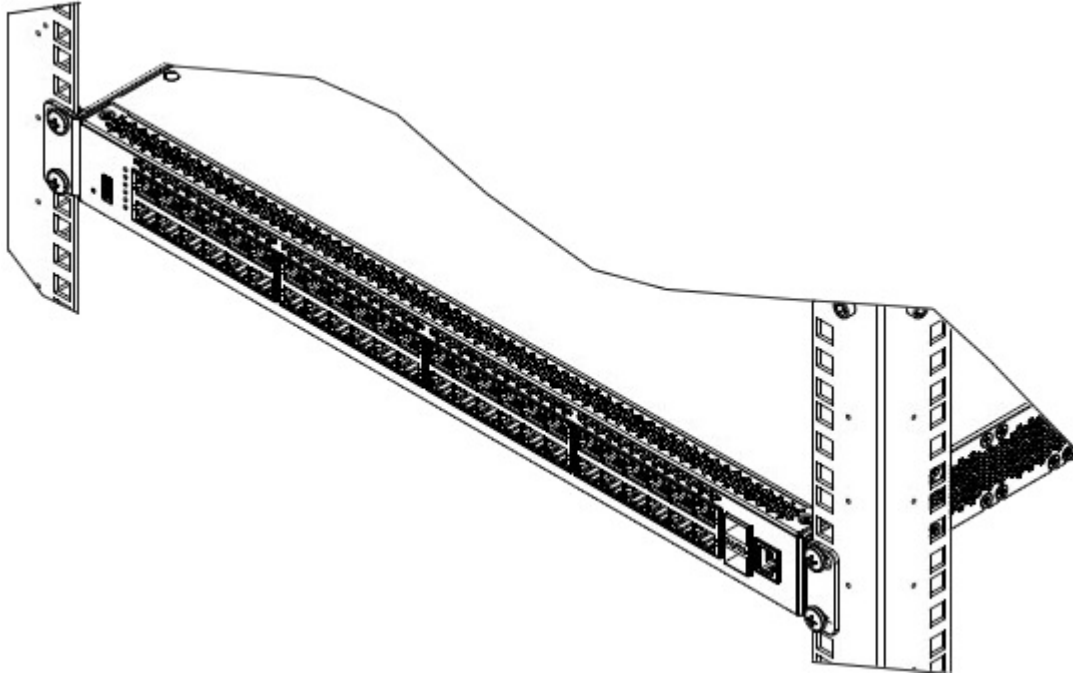


Figure 9: Install switch in rack using front rack mounts

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.

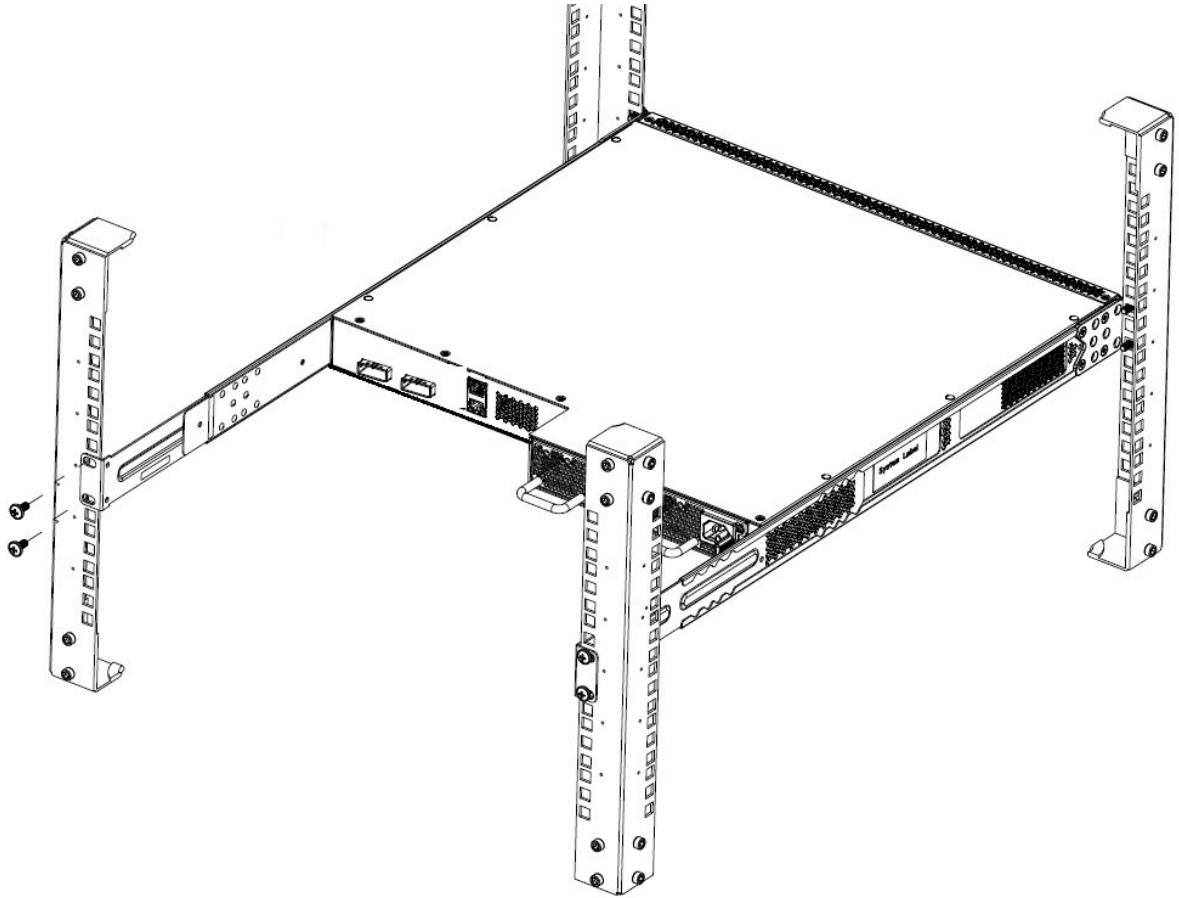


Figure 10: Attach rear mounting brackets

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 Unit specifications](#) on page 22.

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 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 [AC power specifications](#) 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 [AC power cord specifications](#) on page 20.

Procedure

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

*** Note:**

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 49.

Connecting a transceiver to the switch or switch stack

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

Installing SFP transceivers

About this task

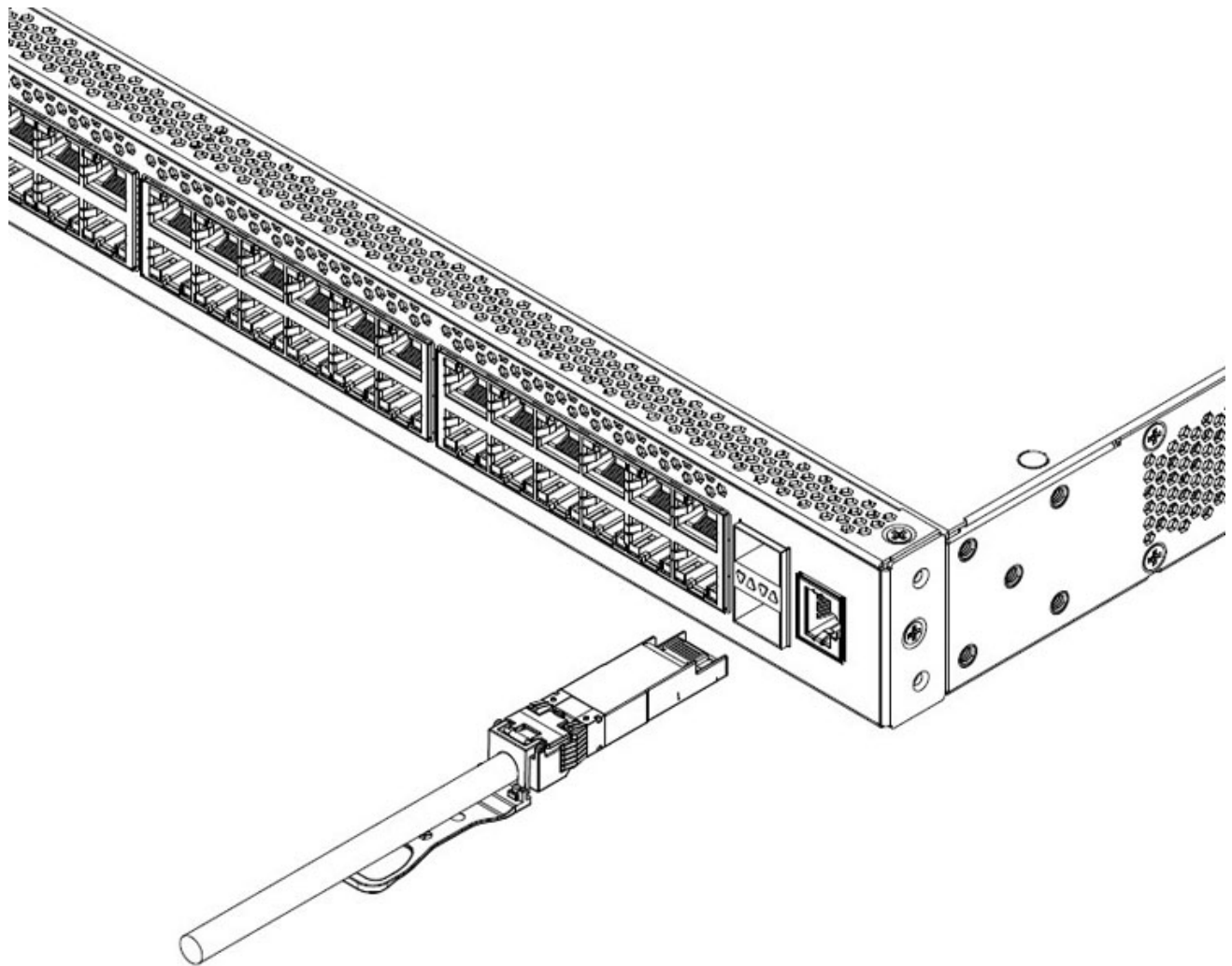
This procedure describes the steps used to install transceivers.

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

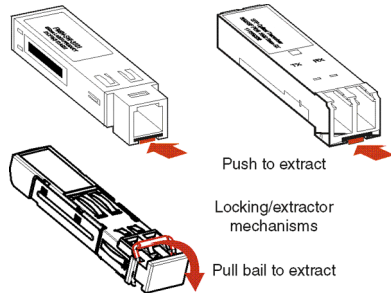
The following graphic shows an SFP transceiver.



Removing of 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:

Avaya recommends that you use Avaya branded SFP and SFP+ transceivers as they undergo extensive qualification and testing. Avaya is not responsible for any problems that arise from using non-Avaya branded SFP and SFP+ 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.

This table is informational only—not all Avaya Ethernet switching and routing products support all the SFPs listed here.

For more information about SFP and SFP+ transceivers, including technical specifications and installation instructions, see *Installing Transceivers and Optical Components on Avaya Ethernet Routing Switch 4900 and 5900 Series*, NN47211-302.

! Important:

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


Table 14: SFP transceivers

Model	Description	Part number
<p>! Important:</p> <p>Avaya supports SFP transceivers with the following part numbers: AA1419013-E5, AA1419014-E5, AA1419015-E5, and AA1419025-E5 to AA1419040-E5. However, Avaya strongly recommends using the newer DDI versions of these SFP transceivers.</p>		
1000BASE-T SFP	gigabit Ethernet, RJ-45 connector	AA1419043-E6
1000BASE-SX SFP	850 nm LC connector	AA1419013-E5** This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-SX SFP	850 nm MT-RJ connector	AA1419014-E5** This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-LX SFP	1310 nm LC connector	AA1419015-E5** This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-XD CWDM SFP	From 1470 nm to 1610 nm LC connector, up to 40 km	AA1419025-E5 to AA1419032-E5** These transceivers have reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-ZX CWDM SFP	From 1470 nm to 1610 nm LC connector, up to 70 km	AA1419033-E5 to AA1419040-E5** These transceivers have reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.

Table continues...

Model	Description	Part number
1000BASE-SX DDI SFP	850 nm, gigabit Ethernet, duplex LC connector	AA1419048-E6
1000BASE-LX DDI SFP	1310 nm, gigabit Ethernet, duplex LC connector	AA1419049-E6
1000BASE-XD DDI SFP	1310 nm, gigabit Ethernet, duplex LC connector	AA1419050-E6* * This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-XD DDI SFP	1550 nm, gigabit Ethernet, duplex LC connector	AA1419051-E6* * This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-ZX DDI SFP	1550 nm, gigabit Ethernet, duplex LC connector	AA1419052-E6* * This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-XD DDI SFP	gigabit Ethernet, duplex LC connector	AA1419053-E6 to AA1419060-E6** These transceivers have reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.
1000BASE-ZX DDI CWDM 70 km SFP	gigabit Ethernet, duplex LC connector	AA1419061-E6 to AA1419068-E6** These transceivers have reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.

Table continues...

Model	Description	Part number
		 Important: AA1419065–E6 remains available for purchase.
1000BASE-BX10 DDI SFP	1310 nm (tx) and 1490 nm (rx) gigabit Ethernet, single-fiber LC connector	AA1419069-E6 (10 km at 1310 nm) and mating pair AA1419070-E6 (10 km at 1490 nm)
1000BASE-BX40 DDI SFP	1490 nm (tx) 1310 nm (rx) gigabit Ethernet, single-fiber LC connector	AA1419076-E6 (40 km at 1310 nm) and mating pair AA1419077-E6 (40 km at 1490 nm)
1000BASE-EX DDI SFP	1550 nm, gigabit Ethernet, duplex LC connector	AA1419071-E6** This transceiver has reached end-of-sale (EOS). For more information about EOS transceivers, and recommended replacements for your product, see Locating end of sale notices on page 42.

Small form-factor pluggable plus (SFP+) transceivers

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

The following table lists and describes the Avaya SFP+ models.

Table 15: Supported SFP+ transceivers and cables

Model	Description	Part number
10GBASE-SR/SW SFP+	400 m, 850 nm MMF	AA1403015-E6
10GBASE-LRM SFP+	220 m, 1260 to 1355 nm; 1310 nm nominal MMF	AA1403017-E6
10GBASE-LR/LW SFP+	10 km, 1310 nm SMF	AA1403011-E6
10GBASE-ER/EW SFP+	40 km, 1550 nm SMF	AA1403013-E6
10GBASE-CX SFP+ 2-pair twinaxial copper cable that plugs into the SFP+ socket and connects two 10-gigabit ports	10 meter	AA1403018-E6
10GBASE-CX SFP+ 2-pair twinaxial copper cable that plugs into the SFP+ socket and connects two 10-gigabit ports	3 meter	AA1403019-E6
10GBASE-CX SFP+ 2-pair twinaxial copper cable that plugs	5 meter	AA1403020-E6

Table continues...

Model	Description	Part number
into the SFP+ socket and connects two 10-gigabit ports		
10GBASE-ZR/ZW SFP+	70 km, 1550 nm SMF	AA1403016-E6
10GBASE-ER CWDM DDI SFP+	40 km, 1471 to 1611 nm	AA1403153-E6 to AA1403160-E6
10GBASE-ZR CWDM DDI SFP+	70 km, 1471 to 1611 nm	AA1403161-E6 to AA1403168-E6
10GBASE-BX10 SFP+	10 km	AA1403169-E6 and AA1403170-E6

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 minimum insertion losses for Avaya optical products, see *Installing Transceivers and Optical Components on Avaya Ethernet Routing Switch 4900 and 5900 Series*, NN47211-302.

Locating end of sale notices

Use the following procedure to locate the most up-to-date information on end of sale notices and replacement recommendations for transceivers and optical components.

Procedure

1. Go to the Avaya Support website at <http://support.avaya.com/>.
2. Select **Support by Product > Documents**.
3. Enter the product name, and a release.
4. Select Product Lifecycle Notices.
5. Click **Enter**.
6. Select the End of Sale notice to view the information.

Stacking

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

Stack connector

The stack connector is a component of the switch back panel and consists of the Unit Select switch, Cascade Down connector, and Cascade Up connector. The stack connector is illustrated in the following diagram.

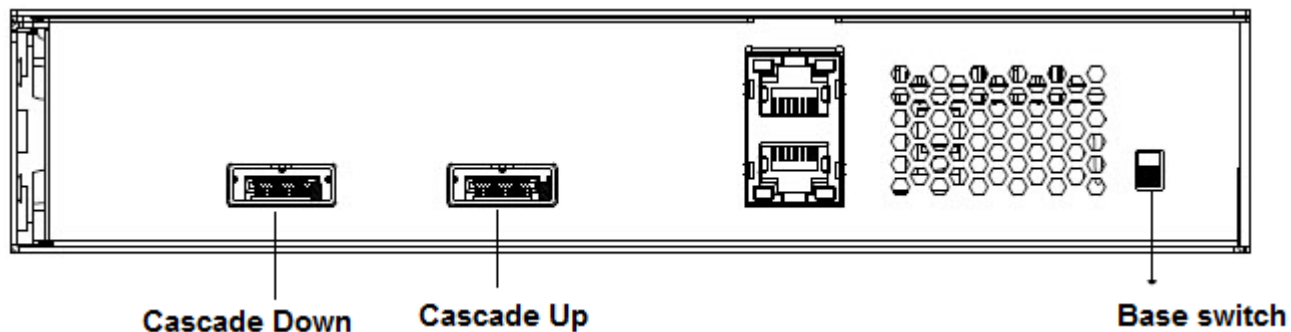


Figure 11: Stack Connector

Unit Select switch

Use the Unit Select switch to designate a switch in the stack as the base unit. Slide the Unit Select switch DOWN to designate a switch as the base unit. You can designate only one switch in a stack as the base unit; that is, with the switch in the base unit position. For all other switches in the stack, the Unit Select switch must be positioned UP.

The base unit designation for a switch appears on the front panel LED display. See [Switch LED state indicators](#) on page 50.

Cascade Down connector

Use the Cascade Down connector to connect a switch to the next unit in the stack through a cascade cable. Connect the other end of the Cascade Down cable to the Cascade Up connector of the next switch in the stack. A return cable from the Cascade Down connector of another unit to the Cascade Up connector of the first unit completes the stack connection.

! Important:

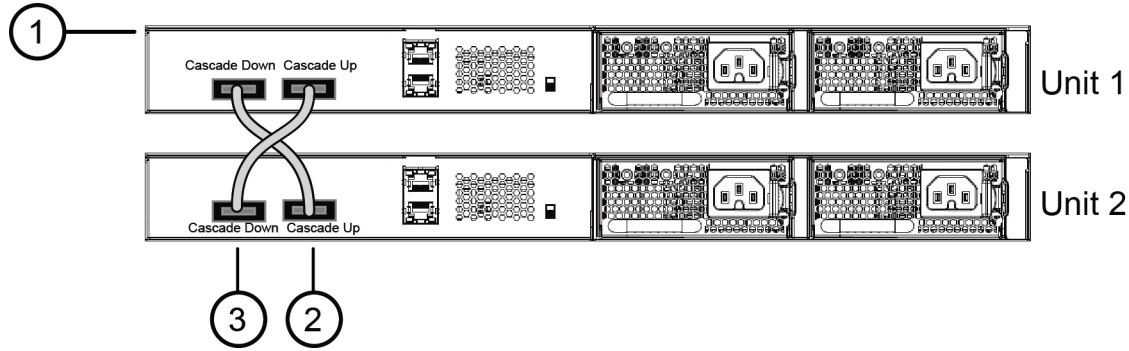
To create a stack connection, order the appropriate switch cascade cables to ensure fail-safe stacking. A 1.5 foot stacking cable is included with the switch. For stacking three or more units (maximum eight units per stack), order the cables as applicable.

Cascade Up connector

The Cascade Up connector provides an attachment point that accepts a cascade cable connection from another unit in the stack. A return cable from the Cascade Down connector of one switch to the Cascade Up connector of an adjacent switch completes the stack connection. The following figure illustrates a typical crossover connection configuration. Failure to use this configuration can result in loss of connectivity.

! Important:

In the Unit 1, set the Base unit select switch position to *Base*.



1. Base Unit
2. Cascade Cable (connected from Base Unit Cascade Down connector to Unit 2 Cascade Up connector)
3. Cascade Cable (connected from Unit 2 Cascade Down connector to Base Unit Cascade Up Connector)

Initial installation unit number assignment

When you install the stack, the software automatically determines the physical order of all units in the stack according to the position of the base unit within the stack. Thereafter, the individual units maintain their original unit numbering, even if you change the position of one or more units in the stack.

For example, when you initially power the stack, the base unit becomes unit 1 and the unit that the base unit connects to (across the Cascade Down cable) becomes unit 2. The next unit is designated as unit 3, this continues until the maximum stack configuration (up to eight units) is reached. If another unit in the stack is designated as the base unit, the new base unit keeps its originally designated unit number in the stack.

Stack MAC address

When a switch participates in a stack configuration, stack initialization automatically assigns a stack MAC address. The stack MAC address is the base unit MAC address plus 1. If another unit in the stack is assigned as the base unit, the new stack MAC address is the MAC address of the new base unit plus 1. The original stack IP address still applies to the new base unit.

Temporary base unit

If an assigned base unit fails, the next unit in the stack order automatically becomes the new temporary base unit. The LED display on the front panel of the temporary base unit changes to a steady amber state to indicate the change. When this happens, use the Unit Select switch to designate the temporary base unit as the base unit until you repair or replace the failed base unit.

You must designate a base unit because the automatic failover is only a temporary safeguard and, if the original unit rejoins the stack, it does not resume base unit status. Also, if the stack configuration loses power, the temporary base unit does not resume base unit status when power is restored.

! Important:

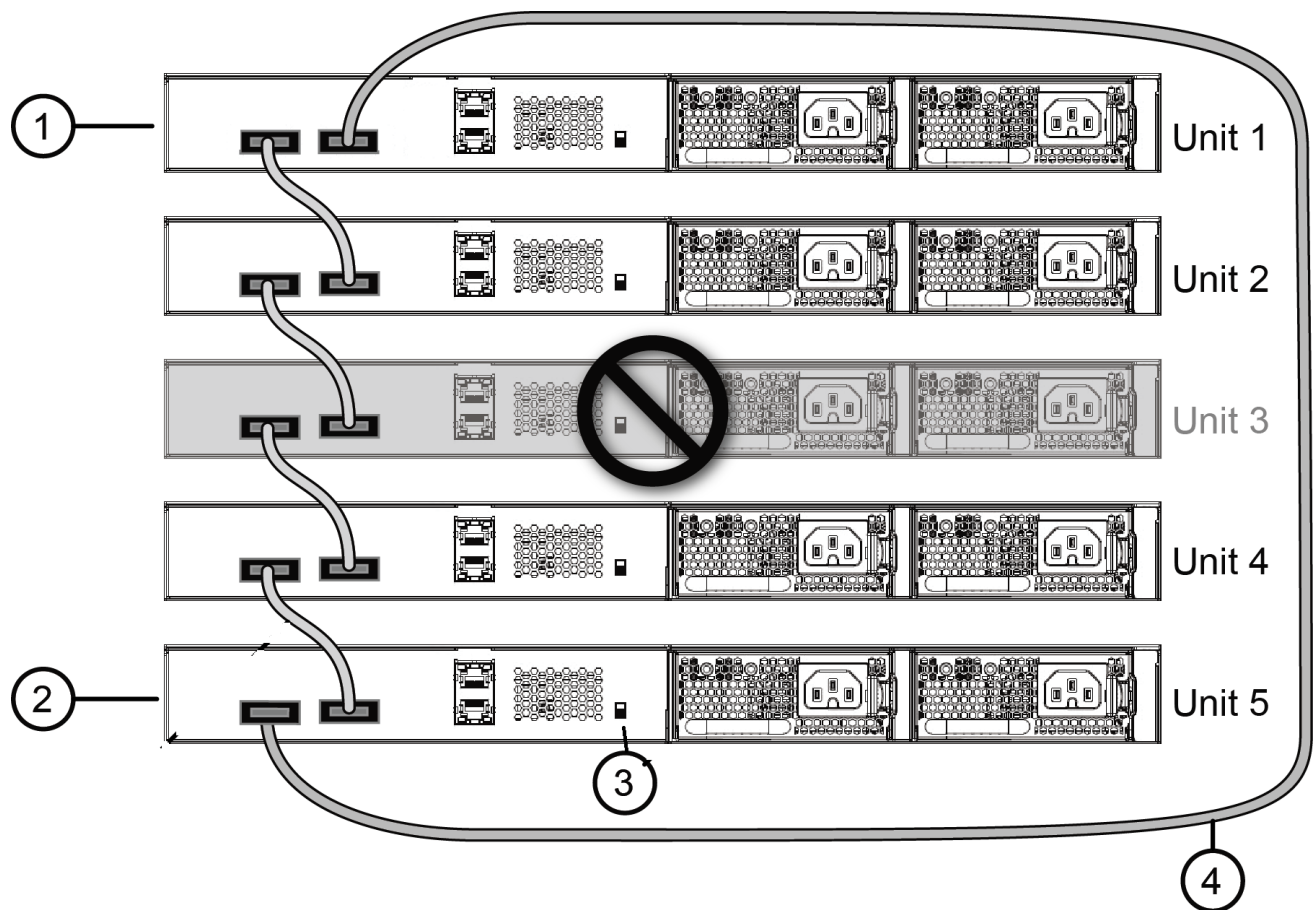
If the temporary base unit is not assigned as the new base unit, and the temporary base unit fails, the next unit in the stack order becomes the temporary base unit. This process continues after successive failures until only two units are left in the stack.

Redundant cascade stacking

You can stack up to eight units into a dual-path cascade stack. If any single unit fails, or if a cable is accidentally disconnected, other units in the stack remain operational.

In addition to increasing bandwidth, the software uses the cables to provide two paths between units. If one path is interrupted, the data travels over the remaining path at half the normal inter-switch bandwidth.

The following figure shows a typical example of a stack configuration reacting to a failed connection in the stack configuration.



1. Base Unit
2. Last Unit
3. Unit selector switch
4. Cascade Cable

In the example, the following occur:

- Unit 3 becomes nonoperational due to a unit failure, cable disconnection, or a loss of power.
- Units 2 and 4, directly upstream and downstream from Unit 3, sense the loss of link signals from unit 3. The software directs all the data to traverse the remaining path.
- The Cascade Down LED for Unit 2 and the Cascade Up LED for Unit 4 turn amber to indicate an error.
- The remaining stack units remain connected and continue to operate.

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:**

Avaya recommends that you use a Cascade Down configuration.

Before you begin

Order the appropriate Avaya Ethernet Routing Switch 4900 Series cascade cables to ensure fail-safe stacking. For more information, see [Cable requirements](#) on page 25.

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 46 for cable connection reference.

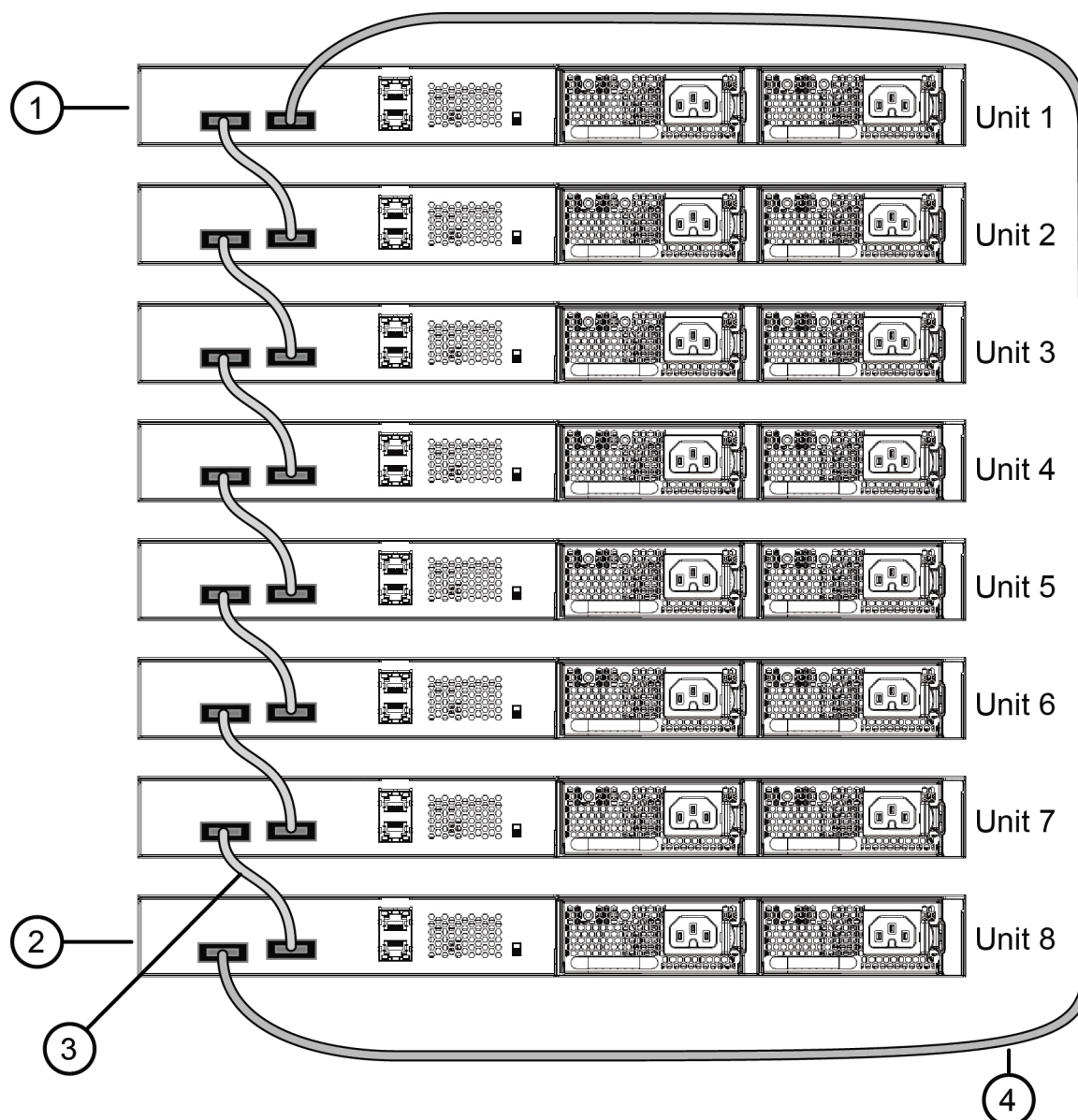
Stack configurations

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.



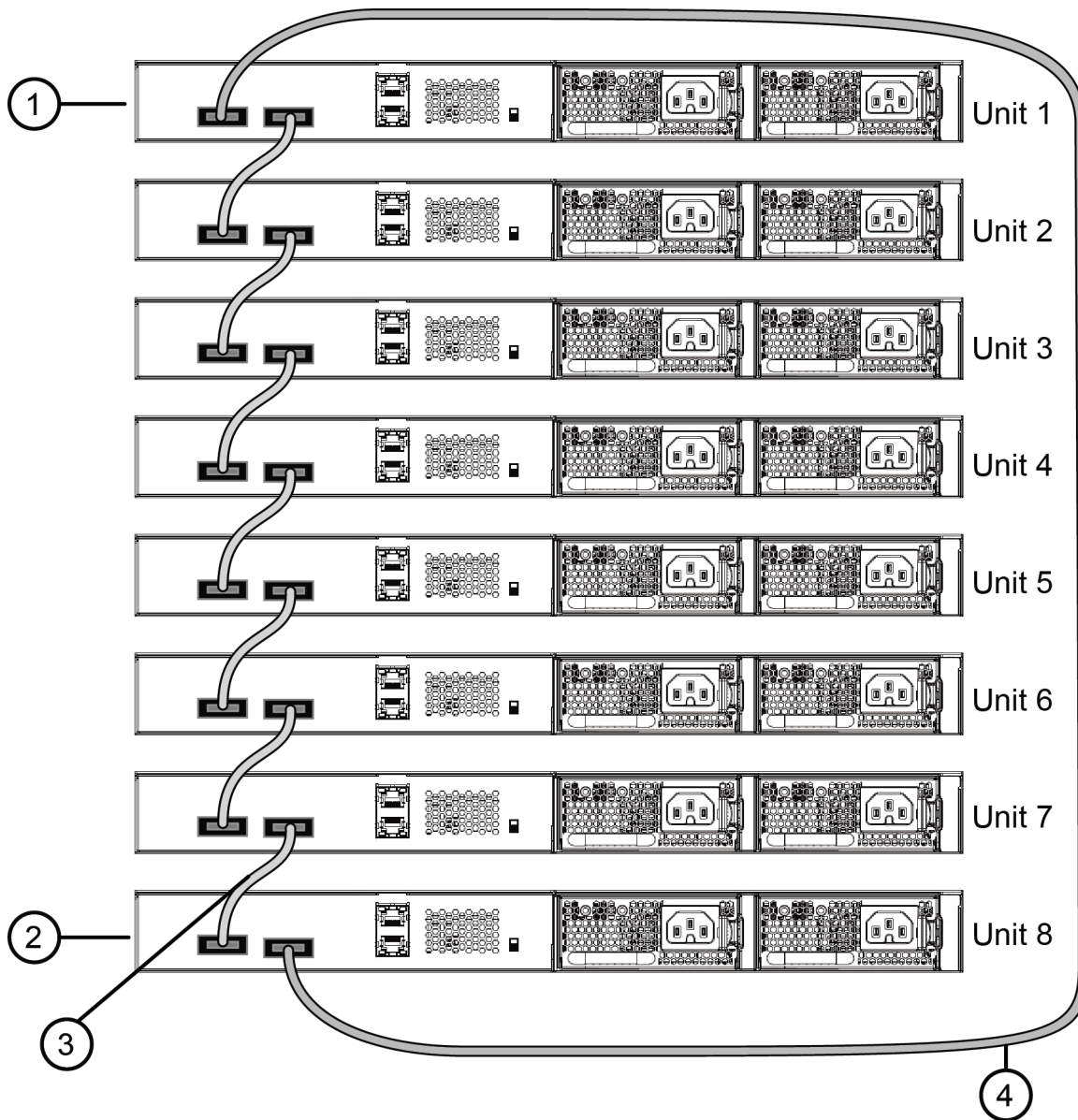
1. Base Unit
2. Last Unit
3. Cascade or Stack Cable
4. Cascade/Stack Cable (Return cable to make stack resilient. Use longer Stack Cable if required)

Figure 12: 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 13: 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 16: 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)	<ul style="list-style-type: none"> • 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 17: 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 18: 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 19: 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.

Appendix A: Translations of safety messages

This module contains translations of the safety messages found in the Ethernet Routing Switch 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:**


Precaución: 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、ラック内のユニットを直接積み重ねないようにしてください。各ユ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。取り付けブ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。每一裝置都必須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, veuillez 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.

 **注意：**この装置をラックに設置する場合は、ラック内のユニットを直接積み重ねないようにしてください。各ユ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。取り付けブ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：**スロットにモジュールを取り付けない場合は、スロットにある金属製のカバープレートが外れないように注意してください。カバープレートを動かすと airflow が妨げられ、適切なユニット冷却が行われなくなります。

 **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装模组，请确定金属盖板正确地盖在插槽上。移除盖板会阻碍空气流通以及装置的适当冷卻度。

 **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 quickly 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.

 **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'adeguata 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なしてください。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。

Index

C

Console pin assignments [22](#)

R

RJ-45 pin assignments [21](#)

S

support [8](#)

U

Universal Serial Bus (USB) ports [21](#)

USB ports [21](#)

V

videos [5](#)