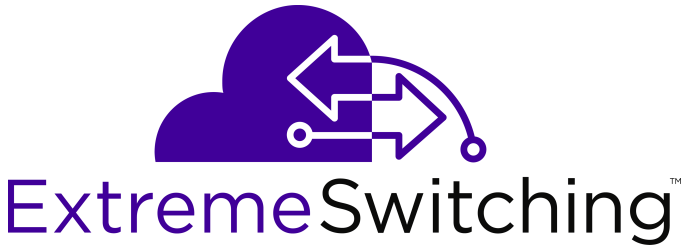

Installing Ethernet Routing Switch 3600 Series

9035409
May 2018

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Contents

Chapter 1: Preface

Purpose

This document provides conceptual information and installation procedures for the switch hardware.

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  - Phone: 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: www.extremenetworks.com/support/contact
  - Email: support@extremenetworks.com. To expedite your message, enter the product name or model number in the subject line.

- GTAC Knowledge – Get on-demand and tested resolutions from the GTAC Knowledgebase, or create a help case if you need more guidance.
- The Hub – A forum for Extreme customers to connect with one another, get questions answered, share ideas and feedback, and get problems solved. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.
- Support Portal – Manage cases, downloads, service contracts, product licensing, and training and certifications.

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

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4. Type your email address.
5. Type your job title.
6. Select the industry in which your company operates.
7. Confirm your geographic information is correct.
8. Select the products for which you would like to receive notifications.
9. Click **Submit**.

Chapter 2: New in this document

There are no new feature changes in this release.

Chapter 3: Preinstallation checklist

Before you install the ERS 3600 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 14.	
2.	Verify the AC power specifications.	See Power specifications on page 16.	
3.	Make sure that you have the following tools and cables: • Phillips #2 screwdriver RJ-45 console port cable • ESD cable	See Identifying cables to use with the Ethernet Routing Switch on page 30.	
4.	Unpack the equipment.	Observe ESD precautions when you unpack the equipment. See Electrostatic discharge prevention on page 13.	
5.	Verify the contents of the shipped package.	See Package contents on page 19 for a description of the components that are provided with the switch. If any components are missing, contact Extreme Networks support.	
6.	Make sure that the power cord has the correct country-specific termination.	See AC power cord specifications on page 17.	
7.	Prepare the equipment rack	Prepare the equipment rack and 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 power service in the area. The ground	

Table continues…

No.	Task	Description	✔
		path must be permanent and must not exceed 1 Ohm of resistance from the rack to the grounding electrode. See Installing ERS 3600 in an equipment rack on page 24.	

Chapter 4: Installation preparation

Switch models

The following table describes the ERS 3600 Series models.

All switch models support autopolarity.

Model	Key features	Part number
ERS3626GTS	• 24 10/100/1000 ports • Two shared SFP ports • Two 1/10 Gigabit SFP+ ports operating in dual mode as uplink ports • Two 10 Gigabit SFP+ ports as either uplink or stacking ports • Non-PoE • Stackable	AL3600?05-E6
ERS3626GTS-PWR+	• 24 10/100/1000 802.3at PoE ports • Two shared SFP ports • Two 1/10 Gigabit SFP+ ports operating in dual mode as uplink ports • Two 10 Gigabit SFP+ ports as either uplink or stacking ports • Stackable	AL3600?15-E6
ERS3650GTS	• 48 10/100/1000 ports • Two shared SFP ports • Two 1/10 Gigabit SFP+ ports operating in dual mode as uplink ports • Two 10 Gigabit SFP+ ports as either uplink or stacking ports • Non-PoE • Stackable	AL3600A06-E6

Table continues…

Model	Key features	Part number
ERS3650GTS-PWR+	• 48 10/100/1000 802.3at PoE ports and 2 shared SFP ports • Two 1/10 Gigabit SFP+ ports operating in dual mode as uplink ports • Two 10 Gigabit SFP+ ports as either uplink or stacking ports • Stackable	AL3600A16-E6

Note:

AC power cords are not packaged with the switch. Ensure you order the correct power cord for your region. For more information, see Supported power cords on page 18.

Universal Serial Bus ports on the Ethernet Routing Switch 3600 Series

The Ethernet Routing Switch 3600 Series includes a USB Type A port on the front panel adjacent to the console port.

The USB Type A port enables switch administrators to perform tasks that were previously completed through TFTP with a commonly available USB Mass Storage Device (also know as a flash drive or thumb drive). These tasks include:

- software download
- syslog backup
- ASCII configuration file generation and download

File and system operations are limited by the size of the USB device in use. Only USB drives that comply with the Mass Storage sub-section of the USB 1.1, USB 2.0, and USB 2.1 specification are supported. Support is not extended to third-party devices that do not comply with these standards. Consult the documentation provided with the USB drive to ensure compliance with these standards.

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 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, Extreme Networks recommends 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.

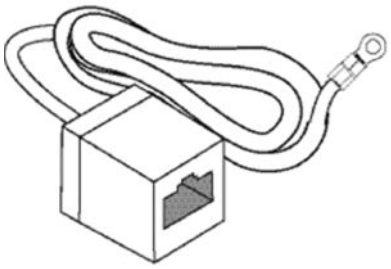


Figure 1: ESD cable

Technical specifications

The following table provides the technical specifications for the individual switches in the ERS 3600 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

	Switch	Specification
Height	ERS 3650GTS, ERS 3650GTS-PWR+, ERS 3626GTS, ERS 3626GTS-PWR+	1U or 44.5 mm (1.75 inches)
Width	ERS 3626GTS, ERS 3626GTS-PWR+, ERS 3650GTS, ERS 3650GTS-PWR	442 mm
Depth	ERS 3626GTS, ERS 3626GTS-PWR+, ERS 3650GTS	280 mm
	ERS 3650GTS-PWR+	380 mm
Weight	ERS 3650GTS	3.93 kg
	ERS 3650GTS-PWR+	6.25 kg
	ERS 3626GTS	3.57 kg
	ERS 3626GTS-PWR+	4.75 kg

Table 2: Electrical specifications

Electrical component	Switch details	Specification
Power consumption	ERS 3650GTS	41.8W@110V, 41.5W@240V
	ERS 3650GTS-PWR+	163.9W@110V, 120.1W@240V
	ERS 3626GTS	24.6W@110V, 24.8W@240V
	ERS 3626GTS-PWR+	151.9W@110V, 105.7W@240V
Thermal rating	ERS 3650GTS	142.5hr@110V, 141.7hr@240V
	ERS 3650GTS-PWR+	559.3hr@110V, 409.6hr@240V
	ERS 3626GTS	83.9hr@110V, 84.6hr@240V
	ERS 3626GTS-PWR+	518.4hr@110V, 360.6hr@240V
MTBF rating	ERS 3650GTS	1,028,941 hrs
	ERS 3650GTS-PWR+	445,133 hrs
	ERS 3626GTS	981,709 hrs
	ERS 3626GTS-PWR+	424,184 hrs

Table 3: Environmental specifications

Environmental component	Specification for ERS 3500 series
Operating Temperature	32° and 122° F (0° and 50° C)
Storage Temperature	-40C to 70C
Operating Humidity	95% RH non-condensing
Storage Humidity	95% RH non-condensing

Table continues…

Environmental component	Specification for ERS 3500 series
Maximum Operating Altitude	10,000 ft
Storage Altitude	10,000 ft
Acoustic Noise (db)	ERS3650GTS — 40.7dB@25C, 47.4dB@50C ERS3650GTS-PWR+ — 46.8dB@25C, 54.6dB@50C ERS3626GTS — 41.2dB@25C, 49.3dB@50C ERS3626GTS-PWR+ — 44.6dB@25C, 54.5dB@50C
Miscellaneous Operating Considerations	• At least 5cm (2") on each side of the switch unit for ventilation • Adequate power source within six feet. One 15 amp circuit required for each power supply • No excessive dust • No nearby sources of severe electromagnetic noise • No nearby heat sources such as hot air vents or direct sunlight

Power specifications

This section provides the following specifications for ERS 3600 Series.

Table 4: AC power specifications

Model	Power supply		Input power (margined by 10%)		Power consumption (Thermal rating)	
	Rated	Line voltage	Watts (Total)	Amps	Watts	BTUs/ hour
ERS3626GTS	54W	100V-110V AC	24.60	0.42	24.60	83.94
	54W	200-240VAC	24.78	0.24	24.78	84.55
ERS3626GTS-PWR+	914.1W	100V-110V AC	874.92	7.05	151.90	518.35
	54W	200-240VAC	828.69	3.66	105.70	360.61
ERS3650GTS	54W	100V-240V AC	41.77	0.69	41.77	142.52
	54W	200-240VAC	41.54	0.41	41.54	141.73

Table continues…

Model	Power supply		Input power (margined by 10%)		Power consumption (Thermal rating)	
	Rated	Line voltage	Watts (Total)	Amps	Watts	BTUs/ hour
ERS3650GTS-PWR+	914.1W	100V-240V AC	903.51	8.21	163.91	559.26
	914.1W	200-240VAC	858.16	3.79	120.06	409.64

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)
ERS3626GTS	14.82	18.28	N/A	14.58
ERS3626GTS-PWR+	26.66	30.17	192.77	27.65
ERS3650GTS	27.89	35.50	N/A	26.95
ERS3650GTS-PWR+	39.84	46.11	363.75	41.61

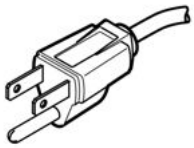
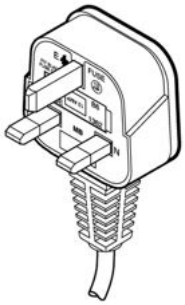
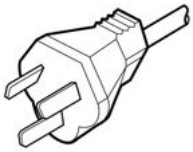
Table 6: PoE+ specifications

Model	Power supply		Power over Ethernet (PoE+) power output	
	Rated	Line voltage	Max power per Port (Watts)	Max power output Sum of all ports (Watts)
ERS3626GTS	54W	100V-240VAC	N/A	N/A
ERS3626GTS-PWR+	914.1W	100V-240VAC	30W	24 Ports at 720W
ERS3650GTS	54W	100V-240VAC	N/A	N/A
ERS3650GTS-PWR+	914.1W	100V-240VAC	30W	48 Ports at 720W

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 7: International power cord specifications

Country and plug description	Specifications	Typical plug
Continental Europe • 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)	220 or 230 VAC 50 Hz Single phase	 228FA
U.S./Canada/Japan • NEMA5-15P male plug • UL-recognized (UL stamped on cord jacket) • CSA-certified (CSA label secured to the cord)	100 or 120 VAC 50-60 Hz Single phase	 227FA
United Kingdom • BS1363 male plug with fuse • Harmonized cord	240 VAC 50 Hz Single phase	 229FA
Australia AS3112-1981 male plug	240 VAC 50 Hz Single phase	 230FA

Supported power cords

The switch supports power cords with Power Cords with C13 Power Supply Side Connector.

AC power cords are not packaged with the switch. Ensure you order the correct power cord for your region.

Order Code	Description	Region
AA0020062E6	POWER CORD 3.05M IEC C13 TO NEMA 5-15P	North America

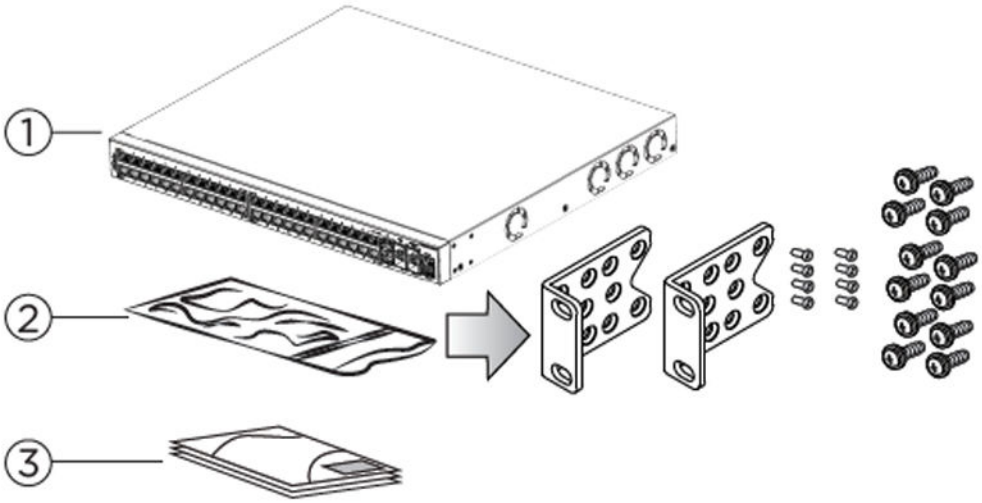
Table continues…

Order Code	Description	Region
AA0020063E6	POWER CORD 2.5M IEC C13 TO BS1363	United Kingdom
AA0020064E6	POWER CORD 2.5M IEC C13 TO CEE 7/7	European Union
AA0020065E6	POWER CORD 2.5M IEC C13 TO CEI 23-16	Italy
AA0020066E6	POWER CORD 2.5M IEC C13 TO GB 2099.1-1996	China
AA0020067E6	POWER CORD 2.5M IEC C13 TO BS-546/SANS164-1	India and South Africa
AA0020068E6	POWER CORD 2.5M IEC C13 TO AS 3112	Australia
AA0020069E6	POWER CORD 2.5M IEC C13 TO JIS 8303	Japan
AA0020101-E6	POWER CORD 2.5M IEC C13 TO NBR 14136 (IEC 60906-1)	Brazil
AA0020104-E6	POWER CORD 2.5M IEC C13 TO SEV 1011	Switzerland
AA0020107-E6	POWER CORD 2.5M IEC C13 TO SI-32	Israel

Verifying the package contents

Note:

AC power cords are not packaged with the switch. Ensure you order the correct power cord for your region.



1. Ethernet Routing Switch 3600 Series
2. Rack-mounting hardware that includes:
   - Rack-mount brackets (2)
   - Screws to attach brackets to the switch (8)
   - Screws to attach the switch to the equipment rack (3 x 4).
3. Rubber footpads (ERS 3626GTS-PWR+ only)
4. Documentation that includes Quick Install poster and the Regulatory Document

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

Note: Be sure to order the correct power cord for your region.

Connecting AC power

Before you begin

- To connect AC power to the switch an appropriate AC power cord is required. Ensure the switch power supply supports AC power input.

  Danger:

  Use only power cords with a grounding path. Without a proper ground, a person who touches the switch is in danger of receiving an electrical shock. A switch without a proper grounding path can result in excessive emissions.

Procedure

1. Plug the female end of the AC power cord into the back of the switch power supply.

   Important:

   The switch powers on immediately when it is connected to a suitable AC power source. The switch does not have a power switch.

2. Plug the male end of the AC power cord into a suitable AC power outlet.

   Caution:

   Ensure you only use an appropriately rated AC power cord. Do not use an extension cord.

   Warning:

   The only way to turn off the switch is to disconnect the power. Always connect the AC power cord in a location that can be reached quickly and safely in case of an emergency.

Chapter 5: Installing the switch

Installing an ERS 3626GTS-PWR+ on a table or shelf

You can install the switch model ERS 3626GTS-PWR+ on a flat surface such as a table or shelf. The surface must be able to support the combined weight of the switch and attached cables. An ERS 3626GTS-PWR+ weights 4.75kg (10.47lb).

Important:

Allow at least 5.1 cm (2 inches) on each side of the switch for proper ventilation and at least 12.7 cm (5 inches) at the back of the switch for power cord clearance.

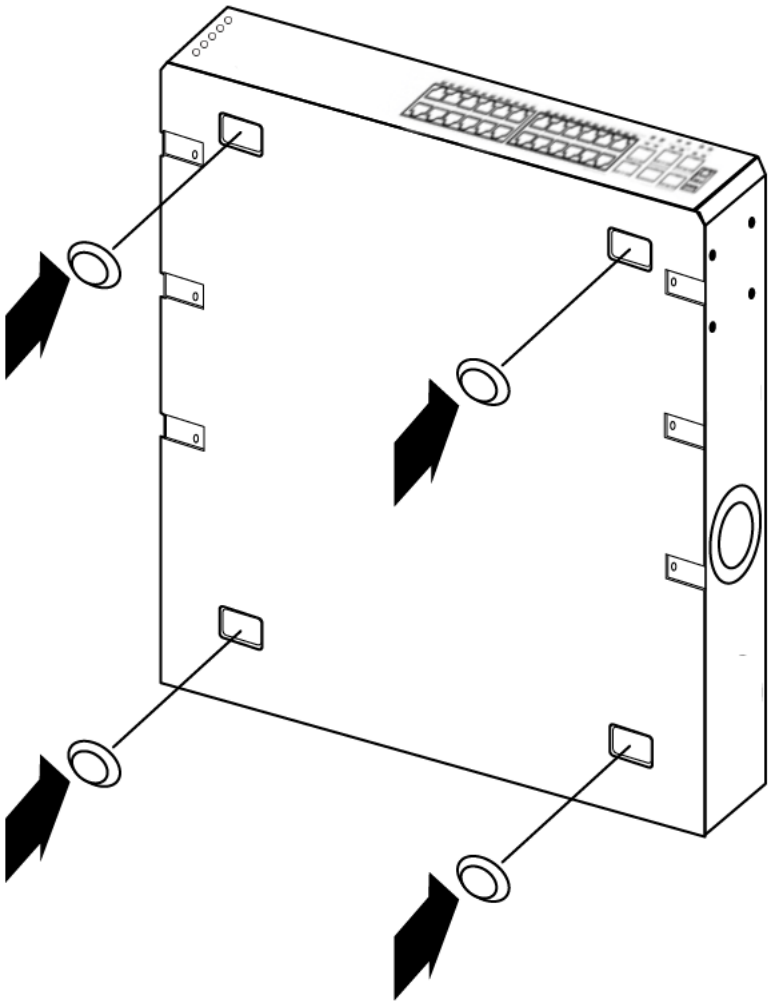
Ambient temperature when low power mode is used must be 30 degrees Celsius (86 F) or lower.

About this task

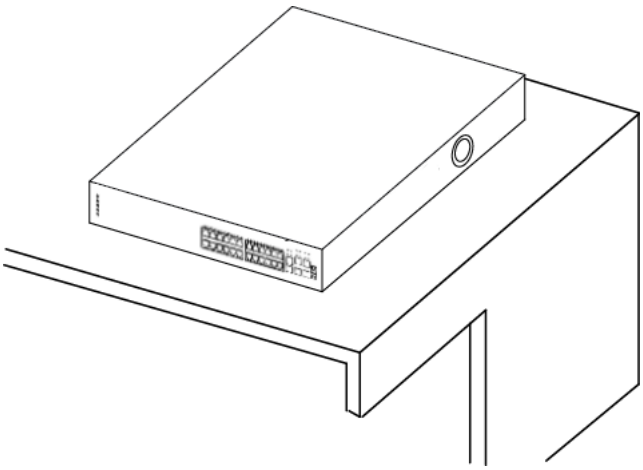
The following procedure provides instructions for installing the switch on a table or shelf.

Procedure

1. Insert the rubber feet at the bottom of the switch.



2. Set the switch on a table or shelf.



Installing ERS 3600 switch in an equipment rack

Before you begin

Tool requirements

- Phillips screwdriver to attach brackets to the switch and the switch to the rack

Rack requirements

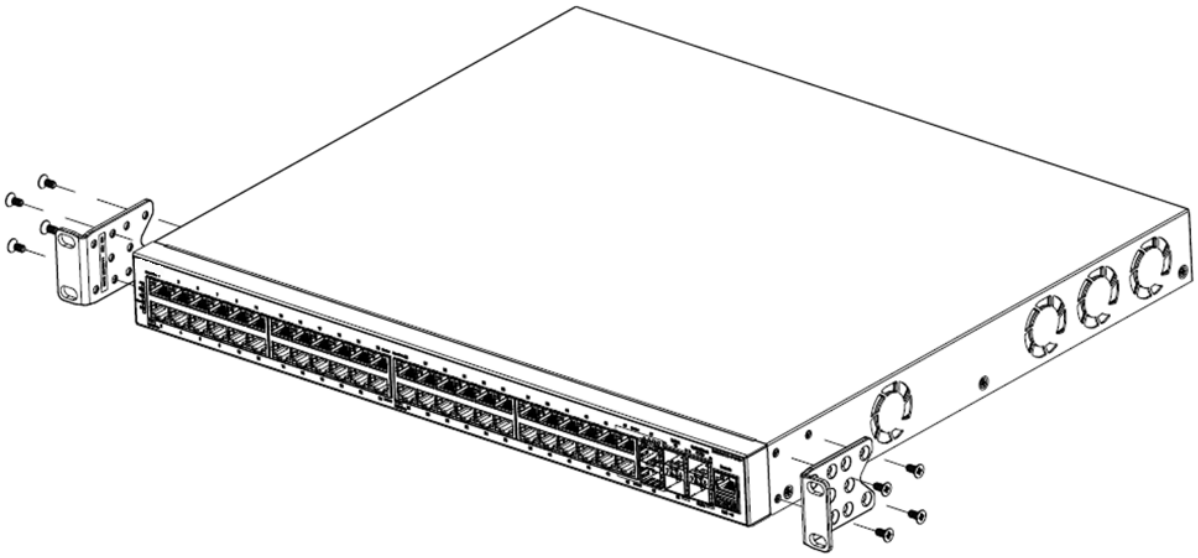
- Space of 2.8 inches (7.1 cm) for each 3626 or 3650 model is available in an E1A or 1EC standard 19 inch (48.2 cm) equipment rack and T1A 23 inch (58.5 cm) equipment rack.
- Appropriate rack space is available to accommodate the following:
  - Height – 1U switch (44 mm)
  - Width – 442 mm
  - Depth – 280 mm (ERS 3626GTS, ERS 3626GTS-PWR+, ERS 3650GTS), 380 mm (ERS 3650GTS-PWR+)
- Rack 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.

Note:

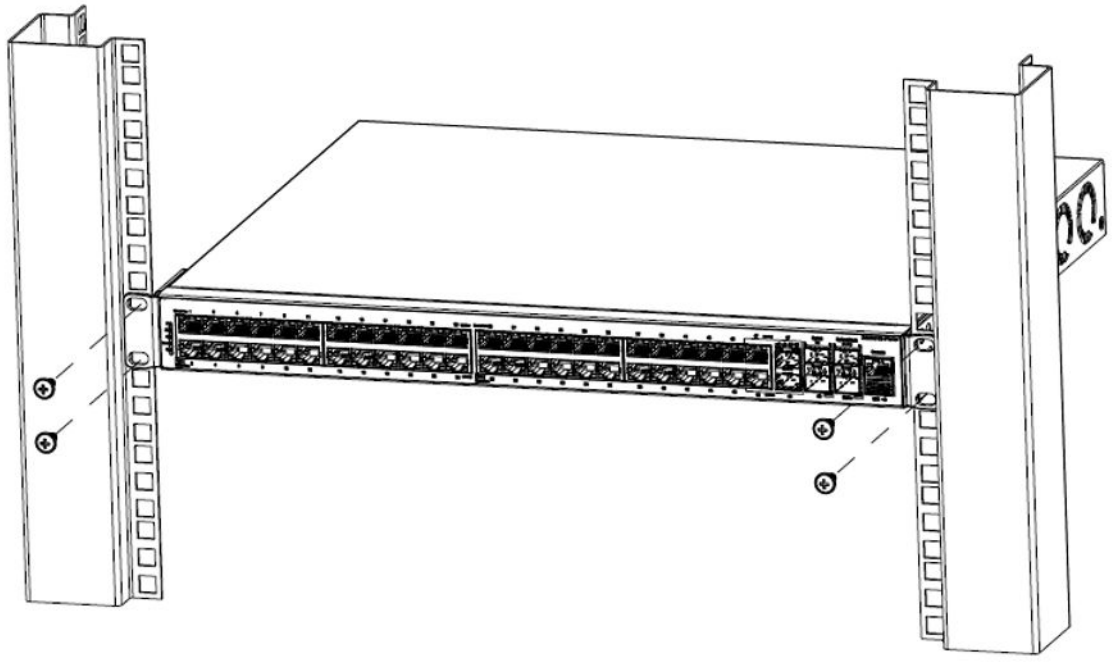
Extreme Networks does not supply the bolts used to secure the switch to the rack. Ensure you obtain the appropriate bolts to secure the switch to your specific rack before you begin.

Procedure

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



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



4. Verify that the switch is securely fastened to the rack.

Single and multiple switch arrangements

You can connect up to eight switch devices that are in one Rack Unit (RU) height in a stack to provide uninterrupted connectivity for up to 224 ports for ERS3626 switches and up to 416 ports for ERS3650 switches. With SFP+ 10Gb stacking cables, the stack bandwidth is 2 ports x 10Gbps/port x 2 directions = 40 Gbps.

Standalone arrangement

Any one switch can operate in a standalone configuration. You can add more switches as your traffic increases.

Stack arrangement

You connect the switches in the stack by the stack connectors. You designate one unit as the base unit by setting a switch on the back panel.

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

The Cascade Down connector connects this switch to the next unit in the stack through a cascade cable. A connection from this connector must be attached to the Cascade Up connector of the next switch in the stack. A return cable from another Cascade Down connector to this unit's Cascade Up connector completes the stack connection.

Important:

To create a stack connection, order the appropriate cascade cables to ensure fail-safe stacking. Order stacking cables of the correct length for a stack of three or more units. You require one long cable (stack return cable) to complete the loop in a stack from the bottom unit to the top unit.

The Cascade Up connector provides an attachment point for accepting a cascade cable connection from another unit in the stack. A return cable from the Cascade Down connector to the Cascade Up onnector on the adjacent unit completes the stack connection.

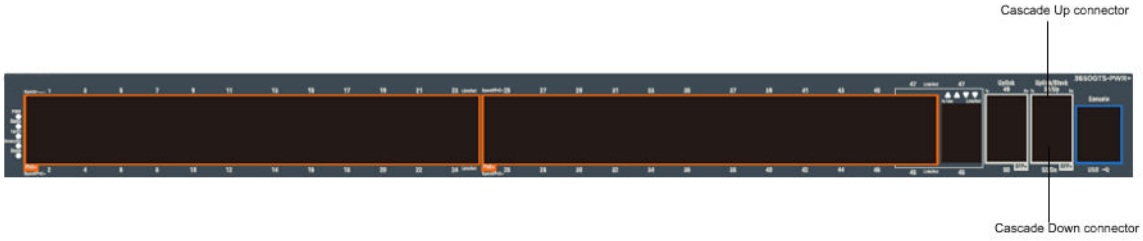


Figure 2: ERS 3600 stack connectors

Understanding stack types

Due to stack parameters being associated with the base unit, the physical stack order depends on the base unit position and whether the stack is configured cascade up (stack up) or cascade down (stack down). This designation depends on the stack cabling arrangement.

The Unit Select switch is used to designate a switch in the stack as a base or non-base unit. Sliding the switch down designates that switch as the base unit. Only one switch in a stack can have the Unit Select switch in the base unit position. All other switches in the stack must have the Unit Select switch in the up position which designates them as non-base units.

During the initial installation of 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 the position of one or more units in the stack is changed.

For example, when the stack is initially powered, the base unit becomes unit 1 and the unit that the base unit connects to (through the Cascade Down cable) becomes unit 2 (and the next unit is unit 3 and so on), until the maximum stack configuration (up to eight units) is reached. If the base unit is changed to another unit in the stack, the new base unit keeps its original unit number in the stack.

When a switch participates in a stack configuration, a stack MAC address is automatically assigned during stack initialization. The stack MAC address is the base unit MAC address plus 1. If another nit 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.

If an assigned base unit fails, the next unit in the stack order automatically becomes the new temporary base unit. This change is indicated by the Base LED on the temporary base unit LED display panel moving to a steady amber state.

This automatic failover is a temporary safeguard only. If the stack configuration loses power, the temporary base unit will not power up as the base unit when power is restored. Also, if the original unit rejoins the stack, it will not resume base unit status. For this reason, always assign the temporary base unit as the base unit until the failed unit is repaired or replaced.

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.

Regardless of stack configuration, the following applies:

- When power is applied to the stack the base unit initializes, typically within 60 seconds, and the entire stack powers up as a single logical unit.
- A RS-232 communications cable can be attached to the console port of any switch in the stack to establish a console connection.
- A software upgrade can be performed on the stack from any switch using the console interface, a Telnet session, the Enterprise Device Manager interface, or any SNMP-based management software.
- The stack can be managed using a Telnet session, Enterprise Device Manager interface, or any SNMP-based management software through any stack switch port.

Cascade down

The system automatically numbers the physical units based on the designated base unit (Unit 1). In a cascade down configuration, the base unit is physically located as the top unit in the stack. 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 physically 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.

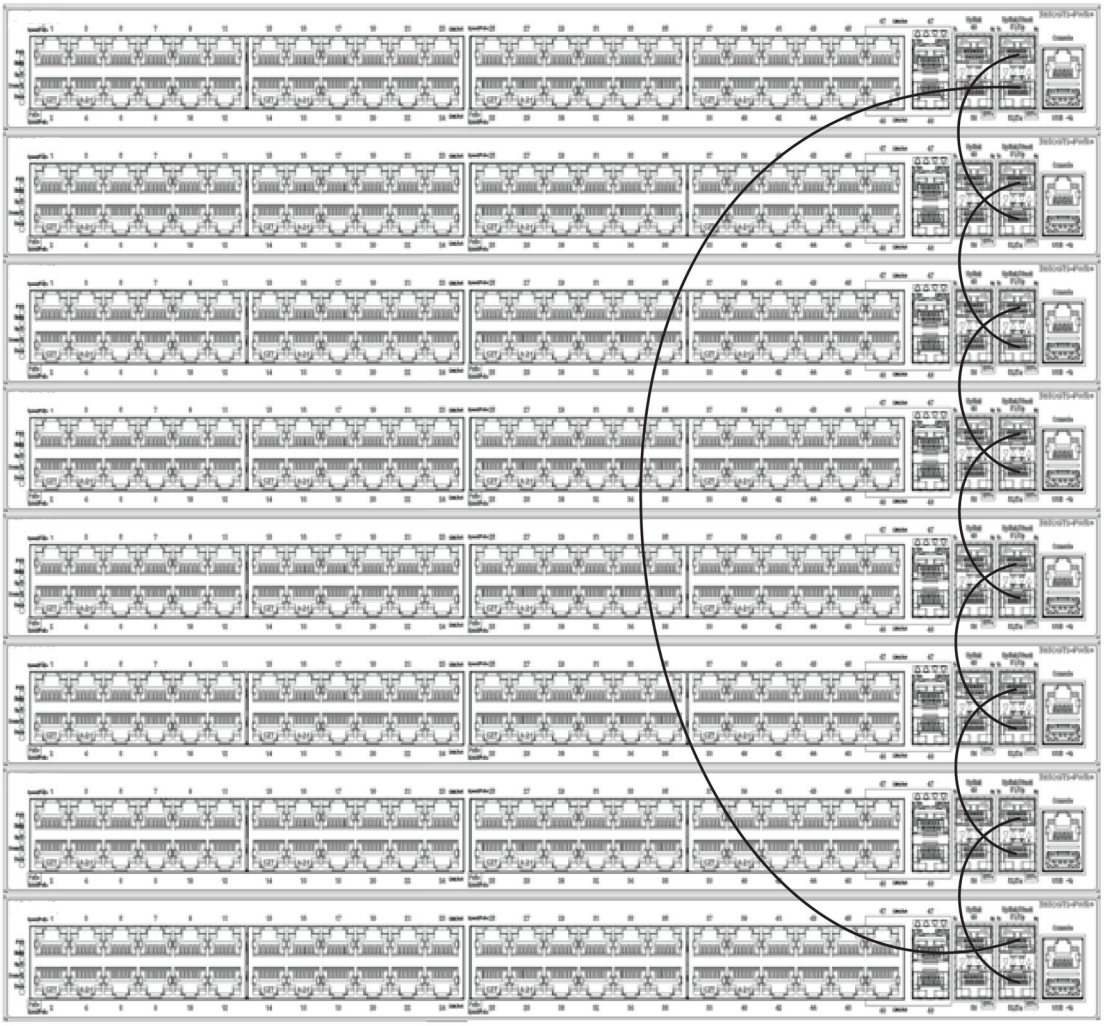


Figure 3: Cascade down configuration

Note:

Return cable length might vary depending on unit spacing. Ensure you order the proper length return cable to provide adequate strain relief.

Important:

Because many network management software packages assume a cascade down (stack down) configuration, Extreme Networks recommends the usage of this configuration.

Cascade up

In a cascade up (stack up) configuration, the base unit is physically located as the top unit in the stack. The cable connected to the Cascade Down connector of the base unit terminates in the Cascade Up connector physically located at the bottom of the stack. This next unit is designated Unit 2. 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. The following illustration shows a cascade up (stack up) configuration.

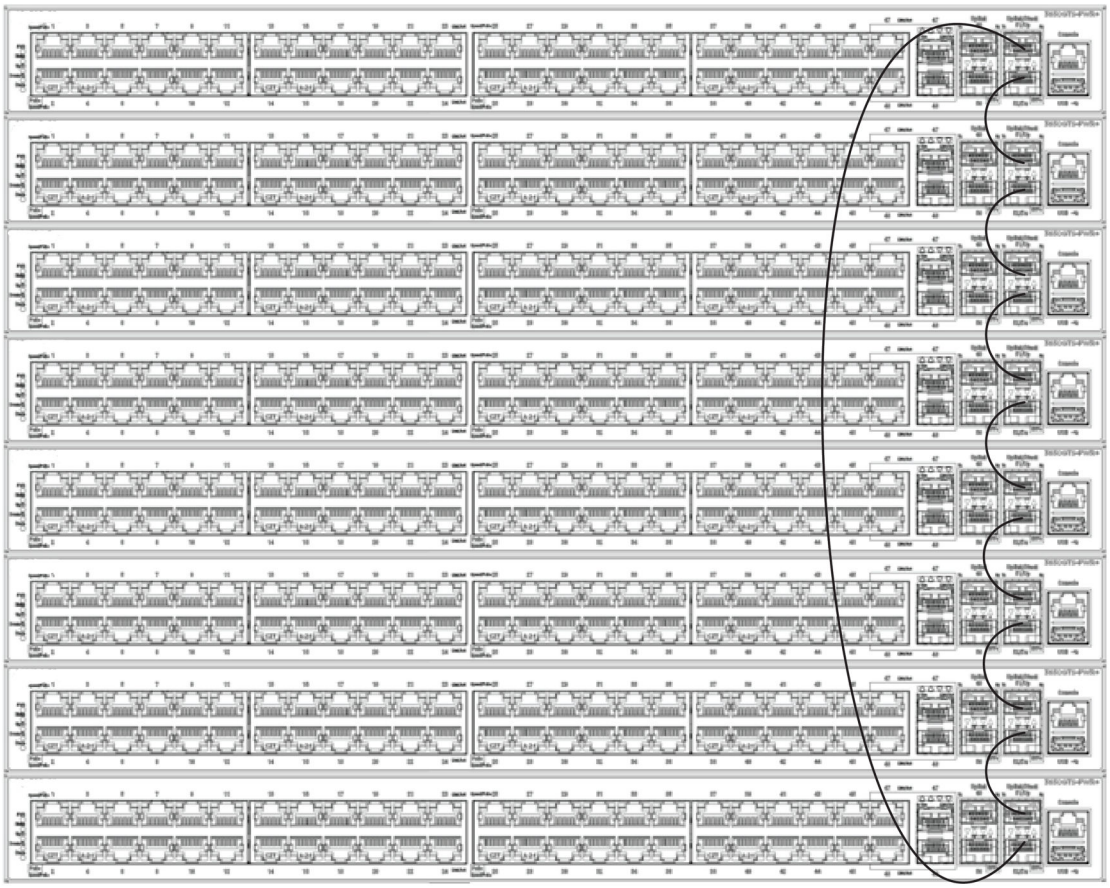


Figure 4: Cascade up configuration

Note:

Return cable length might vary depending on unit spacing. Ensure you order the proper length return cable to provide adequate strain relief.

Redundant cascade stacking

The 3600 Series switches allow a stack of up to eight units in a 3600 Series stack. If any single unit fails or if a cable is accidently disconnected, other units in the stack remain operational without interruption.

In addition to increasing bandwidth, the software uses the cables to provide two paths between

units. If one path breaks the data travels over the remaining path with half the normal inter-switch bandwidth.

Stack configuration

You can change base unit switches with switches on (hot), but changes do not take affect until switches are rebooted.

Selecting a base unit

Procedure

1. Determine which unit will be the base unit.
2. Locate the Base Unit switch on the rear panel.
3. Slide the switch to the down position to designate it as the base unit.

Setting non-base units

Procedure

Set the Base Unit switches to the up position to designate them as non-base units.

Cabling a stack

Procedure

1. Choose a Cascade up or Cascade down configuration.
2. Connect cables as appropriate for the chosen configuration.
3. Select the base unit.
4. Connect the console cable.
5. Connect the AC power cord.

   If you assign the base unit and non-base units with the switches powered up, you must reset the switches for the assignments to be applied.

Identifying cables to use with the Ethernet Routing Switch

The following table lists the required cables for a switch and cable specifications.

Required cable	Description
10/100/1GBase-T Ports	The interconnect cabling must conform to the Cat5e, Cat6, or Cat6e specification of the Commercial Building Telecommunications Cabling Standard, ANSI/TIA/EIA 568-B fitted with an RJ-45 Module Jack.
Console Port	Serial cable with a DB-9 female connector on both ends. The maximum length for the console port cable is 25 feet (8.3 meters).

Table continues…

Required cable	Description
Shared SFP Transceiver Ports	Varies with the installed SFP Transceiver. Refer to the documentation that was shipped with the SFP Transceiver for specifications.
USB Ports	USB 2.1 compliant cable with a USB Type A connector on both ends.

Important:

In Autonegotiation mode, the switches automatically provide the proper MDI/MDI-X connection on the RJ-45 ports; thereby eliminating the need for crossover cables. When Autonegotiation is disabled on 10/100 ports, they are configured as an MDI-X connection.

Connecting a transceiver to the switch or switch stack

The following sections describe small form factor pluggable (SFP) transceivers in the Ethernet Routing Switch 3600 Series. For installation and removal procedures, see *Installing Transceivers and Optical Components on Ethernet Routing Switch 3600 Series*.

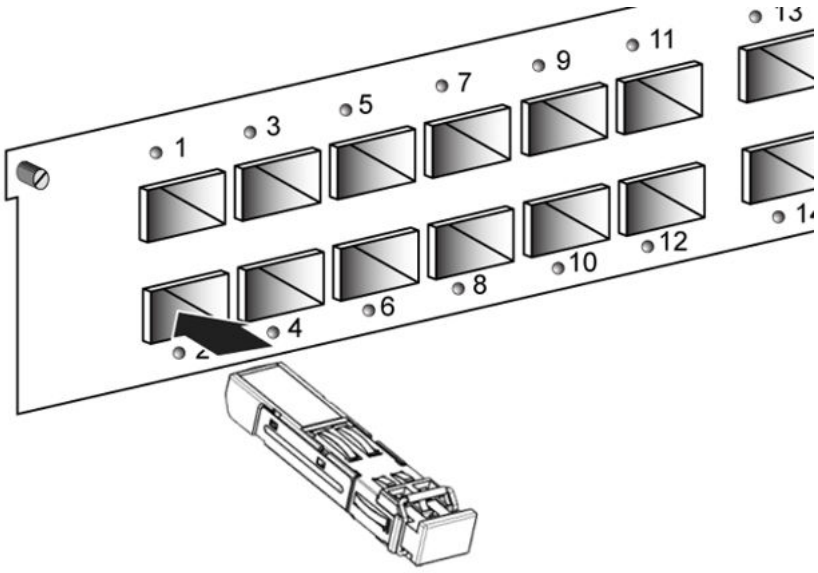
Installing transceivers

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.

Job aid

The following graphic shows an SFP transceiver. The figure does not represent a specific product.



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:

Extreme Networks recommends that you use SFP and SFP+ transceivers as they undergo 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.

This table is informational only—not all 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 Ethernet Routing Switch 3600 Series*.

Important:

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

Table 8: SFP transceivers

Model	Description	Part number
Important: The following SFP transceivers with the part numbers:AA1419013–E5, AA1419014–E5, AA1419015–E5, and AA1419025–E5 to AA1419040–E5. However, Extreme Networks recommends using the newer DDI versions of these SFP transceivers.		
1000BASE-T SFP	Gigabit Ethernet, RJ–45connector	AA1419043–E6
1000BASE-SX DDI SFP	850 nm, GigabitEthernet, duplex LC connector	AA1419048–E6
1000BASE-LX DDI SFP	1310 nm, GigabitEthernet, duplex LC connector	AA1419049–E6
1000BASE–ZX DDI CWDM 70 km SFP	Gigabit Ethernet,duplex LC connector	AA1419065-E6
1000BASE-BX10 DDI SFP	1310 nm (tx) and 1490 nm (rx)	AA1419069–E6 (10 km at 1310 nm) and mating pair AA1419070–E6 (10 km at 1490 nm)
00BASE-FXSFP	1300 nm, 100Mbps Ethernet, multimode fiber, duplex LC connector	AA1419074–E6

Small form-factor pluggable plus (SFP+) 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 SFP and SFP+ transceivers, including technical specifications and installation instructions, see *Installing Transceivers and Optical Components on Ethernet Routing Switch 3600 Series*.

Operating 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 optical products, see *Installing Transceivers and Optical Components on Ethernet Routing Switch 3600 Series*.

Checking status LEDs to verify switch installation

Perform this procedure to verify the hardware installation and operation of the unit.

The status LEDs on the front of the unit indicate the installation and operational status of the hardware.

Important:

When used as Stacking ports, the LEDs on the left of the switch indicate Stack port status. The Stack Up and Stack Down LEDs are updated as the Stack ports become active or idle. Their local port LEDs do not indicate Stack port status.

When used as Standalone ports, the local LEDs indicate port status, like all other ports.

Stack LEDs on ports 25/26 on ERS 3626GTS and ERS3626GTS-PWR+ and on ports 51/52 on ERS 3650GTS and ERS3650GTS-PWR+ light up green when the port is active and they blink in sync with traffic even if the stack is not formed or if the stack is misconfigured.

Note:

The port LEDs reflect the status of the physical link and not the status of the stack.

The LEDs also remain lit during agent download.

Before you begin

Perform the following tasks before checking the status LEDs.

- Install the switch in an equipment rack or on a shelf.
- Connect power to the switch.

Procedure

1. Locate the status LEDs on the front of the unit; see the following figure.

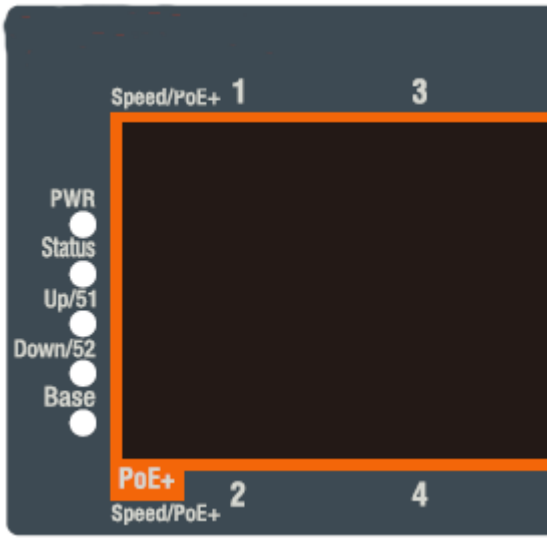


Figure 5: Status LEDs for ERS 3600 switch

2. Verify the status and operating mode of the unit.

   For status LED state descriptions, see the following table.

LED	State	Description
PWR	Off	The unit power is off.
	Green (Solid)	Normal operation.
Status	Off	System cannot work properly (like temperature is too high).
	Amber (Solid)	The system failed self-test.
	Green (Solid)	Normal operation.
UP/Down	Off	No Stack-up or Stack-down connection is detected.
	Amber (Solid)	A Stack-up or Stack-down cable is detected, but adjacency has not been completed.
	Green (Solid)	The unit has formed a neighbor with an adjacent unit over the Stack-up or Stack-down cables.
Base	Off	The unit is operating in a standalone mode, or not the stack base unit.
	Amber (Solid)	The unit is operating as the Temporary Base Unit.
	Green (Solid)	The unit is operating as the Base Unit for the designated stack.
	Green (Blinking)	There is a stack configuration error. Either multiple base units or no base unit is configured in the stack.

Table 9: Shared SFP transceiver Port LED state indicators

Label	Color/Status	Description
In Use	Green/steady	The port has a link established.
	Off	The port does not have a link established.
LNK/ACT	Green/steady	This link is operating normally.
	Green/blinking	There is activity on the port.
	Green/slow blinking	The port has been disabled by the software.
	Off	Indicates that the link has been lost.

Table 10: SFP+ transceiver Port LED state indicators

Label	Color/Status	Description
Tx	Off	No link established.
	Solid Green	SFP+ detected and link established.
	Green / blinking	SFP+ link established and transmit activity detected.
	Solid Amber	SFP detected and Link established.
	Amber / blinking	SFP link established and transmit activity detected.
	Green / slow blinking	RX & TX blinking together in a slow pattern indicate that the port has been disabled by the software.
Rx	Off	No link established.
	Solid Green	SFP+ detected and link established.
	Green / blinking	SFP+ link established and receive activity detected.
	Solid Amber	SFP detected and link established.
	Amber / blinking	SFP link established and receive activity detected.
	Green / slow blinking	RX & TX blinking together in a slow pattern indicate that the port has been disabled by the software.

IP address information configuration

The following sections contain information necessary to configure IP address parameters on the switch.

Connecting a console

Before you begin

- Terminal with AC power cord and keyboard
- Serial cable — a DB-9 to RJ-45 adapter or other suitable console cables can be used – the maximum length of a console cable is 25 feet (8.3 meters)

Procedure

1. Connect one end of serial cable to the DB—9 connector on the terminal.
2. Connect the other end of the serial cable to the RJ–45 connector on the switch.
3. Turn the terminal on.

Accessing the console menu

Procedure

1. Connect a terminal to the console port of the switch.
2. Set the terminal protocol on the terminal or terminal emulation program to VT100 and VT100/ANSI.
3. Connect to the switch using the terminal or terminal emulation application.
4. After the Extreme Networks banner is displayed, press CTRL + Y to display the main menu. The version of the main menu displayed is dependent on whether the switch is part of a standalone or stacked switch configuration.

Assigning IP parameters using the console menu

Procedure

1. From the console menu, select IP Configuration/Setup.
2. Assign an IP address to the switch.
   - For a standalone switch, enter a value in the In-Band Switch IP Address field in dotted-decimal notation.
   - For a stack configuration, enter a value in the In-Band Stack IP Address field in dotted-decimal notation.
3. In the In-Band Subnet Mask field enter the appropriate subnet mask in dotted-decimal notation.
4. In the Default Gateway field, enter the appropriate default gateway in dotted-decimal notation.
5. Press CTRL + C to return to the main menu.

Job aid

Any terminal or PC with an appropriate terminal emulator can be used as the management station. The following table lists the parameters that must be used with any terminal emulation software used to connect to the switch.

Table 11: Terminal emulation settings

Property	Value
Baud Rate	9600 bps
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None

Assigning IP parameters using Enterprise Device Manager

Procedure

1. Connect a computer to the switch through a data port using a standard RJ-45 network cable.
2. Open a Web browser on the attached computer.
3. Enter the factory default IP address of the switch in the following format: `http://<IPAddress>`.
4. In the navigation pane of the Enterprise Device Manager Interface, click **Administration > Quick Start**.
5. In the In-Band Stack IP Address dialog box of the IP/Community/Vlan work area, type a switch or stack IP address.
6. In the In-Band Subnet Mask dialog box, type a subnet mask.
7. In the Default Gateway dialog box, type an IP address.
8. Click **Apply**.

Note:

For more information about switch configuration, see *Quick Start Configuration for Ethernet Routing Switch 3600 Series*.

Verifying assigned IP address is reachable

Before you begin

- Ensure you have assigned an IP address to the switch.
- Physically connect the switch to the network.
- Ensure the terminal from which you ping the switch is on the same network as the switch.

Procedure

Ping the 3600 Series switch from a terminal or workstation that is on the same network. If the network device sends a ping reply, a message indicates that the specified IP address is alive and can communicate with other devices.

Chapter 6: Installation reference

Console and management connections

The front panel of the switch contains the Status LEDs, Console port, and a USB 2.1 port.

The rear panel of the switch contains the Base Unit switch.

Console port

The console port is the RJ45 port with a blue border outline. You can use the console port to establish a management terminal connection to the switch. You can use an RJ45 to DB-9 cable, or a DB-9 to RJ45 adapter to connect the switch console port to your management terminal. The maximum length of a console cable is 25 feet (8.3 meters).

The following figure and table describe the RJ45 console port pin-out information. You can use the pin-out information to verify or create a console cable for use with your maintenance terminal.

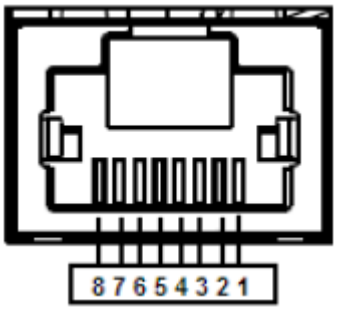


Figure 6: RJ45 console port pin-out

RJ45 console port pin-out	Signal	Requirement
1	RTS (ready to send)	Optional (can be swapped or linked with pin
2	DTR (data terminal ready)	Optional
3	TXD (transmit data)	Mandatory
4	DCD (carrier detect)	Optional
5	GND (ground)	Mandatory

Table continues…

RJ45 console port pin-out	Signal	Requirement
6	RXD (receive data)	Mandatory
7	DSR (data set ready)	Optional
8	CTS (clear to send)	Optional (can be swapped or linked with pin

USB port

The USB port is a Standard Type-A female USB 2.1 port. The switch provides USB host functionality and can support USB flash drives.

Chapter 7: 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, 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.

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気流が妨げられ、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 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。