HP 5500 EI & 5500 SI Switch Series Installation Guide



Part number: 5998-1710 Document version: 6W101-20130630

Legal and notice information

© Copyright 2011-2013 Hewlett-Packard Development Company, L.P.

No part of this documentation may be reproduced or transmitted in any form or by any means without prior written consent of Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

HEWLETT-PACKARD COMPANY MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Contents

Preparing for installation	
Safety recommendations ······	
Examining the installation site ·····	
Temperature/humidity ······	1
Cleanness	2
EMI	2
Laser safety	2
Installation tools	3
Installing the switch	
Installing the switch in a 19-inch rack	
Mounting brackets······	
Rack-mounting by using only front mounting brackets ·····	
Rack-mounting by using front mounting brackets and a rack shelf	
Rack-mounting by using front and rear mounting brackets	
Mounting the switch on a workbench	
Grounding the switch ······	
Grounding the switch with a grounding strip	
Grounding the switch with a grounding conductor buried in the earth ground	
Grounding the switch by using the AC power cord	
Installing/removing a power supply	
Installing a power supply ······	
Removing a power supply	
Connecting the power cord	
Connecting the AC power cord	
Connecting the PSR150-D/PSR150-D1 to a -48 VDC power source	
Connect the switch to a +12 VDC output RPS	
Connecting the switch to a –52 to –55 VDC output RPS	
Installing/removing an interface card	
Installing an interface card	
Removing an interface card ······	
Installing/removing a dedicated CX4/SFP+ cable	
Verifying the installation	
Accessing the switch for the first time	24
Setting up the configuration environment	
Connecting the console cable	
Console cable ······	
Connection procedure	
Setting terminal parameters	

Powering on the switch	
Setting up an IRF fabric	
IRF fabric setup flowchart	
Planning IRF fabric setup	
Planning IRF fabric size and the installation site	
Identifying the master switch and planning IRF member IDs	
Planning IRF topology and connections	
Identifying physical IRF ports on the member switches	
Planning the cabling scheme ······	
Configuring basic IRF settings	
Connecting the physical IRF ports	
Accessing the IRF fabric to verify the configuration	
Maintenance and troubleshooting	
Power supply failure	
Built-in power supply failure ······	
Hot swappable power supply failure	
Fan failure	
Configuration terminal problems	
Appendix A Chassis views and technical specifications	
Chassis views ·····	
5500-24G EI (2 slots)/5500-24G EI TAA (2 slots)/5500-24G SI (2 slots)·····	
5500-48G EI (2 slots)/5500-48G EI TAA (2 slots)/5500-48G SI (2 slots)·····	
5500-24G-SFP EI (2 slots)/5500-24G-SFP EI TAA (2 slots)	
5500-24G-PoE+ EI (2 slots)/5500-24G-PoE+ EI TAA (2 slots)/5500-24G-PoE+ SI (2 slots)	
5500-48G-PoE+ EI (2 slots)/5500-48G-PoE+ EI TAA (2 slots)/5500-48G-PoE+ SI (2 slots)	
Technical specifications	
Chassis dimensions and weights	
Ports and interface card slots ······	
Environmental specifications	
Power specifications	
Power input types ·····	
AC input voltage specifications	
RPS DC input voltage specifications and RPS compatibility	
Power consumption specifications for non-PoE switches	
Power consumption specifications for PoE switches	
Cooling system	
Appendix B FRUs and compatibility matrixes	
Hot swappable power supplies	
Interface cards	
SFP/SFP+/XFP transceiver modules and SFP+/CX4 cables	
GE SFP transceiver modules	
FE SFP transceiver modules ······	

10-GE SFP+ transceiver modules······51
SFP+ cables······52
10-GE XFP transceiver modules52
CX4 cables53
Appendix C Ports and LEDs
Ports 54
Console port ······54
10/100/1000Base-T Ethernet port54
SFP port54
Combo interface55
LEDs 55
System status LED56
Power supply status LEDs56
RPS status LED56
Port mode LED······57
Seven-segment LED57
10/100/1000Base-T Ethernet port LED······58
SFP port status LED ···································
Interface card status LED······60
Support and other resources61
Contacting HP61
Subscription service61
Related information61
Documents ·······61
Websites61
Conventions62
Index64

Preparing for installation

Safety recommendations

To avoid any equipment damage or bodily injury caused by improper use, read the following safety recommendations before installation. Note that the recommendations do not cover every possible hazardous condition.

- Before cleaning the switch, unplug all power cords. Do not clean the switch with wet cloth or liquid.
- Do not place the switch near water or in a damp environment. Prevent water or moisture from entering the switch chassis.
- Do not place the switch on an unstable case or desk. The switch might be severely damaged in case of a fall.
- Ensure proper ventilation of the equipment room and keep the air inlet and outlet vents of the switch free of obstruction.
- Make sure the operating voltage is in the required range.
- To avoid electrical shocks, do not open the chassis while the switch is operating or when the switch is just powered off.
- When replacing FRUs, wear an ESD-preventive wrist strap to avoid damaging the units.

Examining the installation site

The 5500 EI and 5500 SI switches must be used indoors. You can mount your switch in a rack or on a workbench, but make sure:

- Adequate clearance is reserved at the air inlet and exhaust vents for ventilation.
- The rack or workbench has a good ventilation system.
- The rack is sturdy enough to support the switch and its accessories.
- The rack or workbench is well earthed.

To ensure normal operation and long service life of your switch, install it in an environment that meets the requirements described in the following subsections.

Temperature/humidity

Maintain appropriate temperature and humidity in the equipment room.

- Lasting high relative humidity can cause poor insulation, electricity creepage, mechanical property change of materials, and metal corrosion.
- Lasting low relative humidity can cause washer contraction and ESD and bring problems including loose captive screws and circuit failure.
- High temperature can accelerate the aging of insulation materials and significantly lower the reliability and lifespan of the switch.

For the temperature and humidity requirements, see "Environmental specifications."

Cleanness

Dust buildup on the chassis may result in electrostatic adsorption, which causes poor contact of metal components and contact points, especially when indoor relative humidity is low. In the worst case, electrostatic adsorption can cause communication failure.

Table 1 Dust concentration limit in the equipment room

Substance	Concentration limit (particles/m³)
Dust	\leq 3 x 10 ⁴ (no visible dust on the tabletop over three days)
NOTE:	
Dust diameter ≥ 5 µm	

The equipment room must also meet strict limits on salts, acids, and sulfides to eliminate corrosion and premature aging of components, as shown in Table 2.

Gas	Maximum concentration (mg/m³)
SO ₂	0.2
H ₂ S	0.006
NH ₃	0.05
Cl ₂	0.01

EMI

All electromagnetic interference (EMI) sources, from outside or inside of the switch and application system, adversely affect the switch in a conduction pattern of capacitance coupling, inductance coupling, electromagnetic wave radiation, or common impedance (including the grounding system) coupling. To prevent EMI, take the following actions:

- If AC power is used, use a single-phase three-wire power receptacle with protection earth (PE) to filter interference from the power grid.
- Keep the switch far away from radio transmitting stations, radar stations, and high-frequency devices.
- Use electromagnetic shielding, for example, shielded interface cables, when necessary.
- Route interface cables only indoors to prevent signal ports from getting damaged by overvoltage or overcurrent caused by lightning strikes.

Laser safety

The 5500 EI and 5500 SI switches are Class 1 laser devices.

▲ WARNING!

Do not stare into any fiber port when the switch has power. The laser light emitted from the optical fiber may hurt your eyes.

Installation tools

- Flathead screwdriver
- Phillips screwdriver
- Needle-nose pliers
- Wire-stripping pliers
- Diagonal pliers
- ESD-preventive wrist strap
- Blow dryer

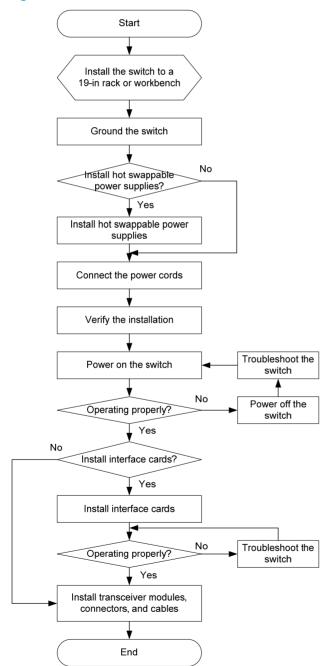
All these installation tools are user supplied.

Installing the switch

\land CAUTION:

Keep the tamper-proof seal on a mounting screw on the chassis cover intact, and if you want to open the chassis, contact your local HP agent for permission. Otherwise, HP shall not be liable for any consequence caused thereby.





Installing the switch in a 19-inch rack

You can install the switch in a 19-inch standard rack by using different mounting positions. Table 3 shows the installation methods available for the switches of different depths.

Table 3 Installation methods

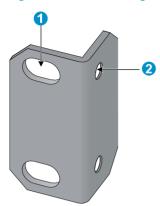
Chassis	Depth	Use front mounting brackets only	Use front mounting brackets and a rack shelf	Use front and rear mounting brackets
5500-24G EI (2 slots) 5500-24G EI TAA (2 slots) 5500-24G SI (2 slots) 5500-48G EI (2 slots) 5500-48G EI TAA (2 slots) 5500-48G SI (2 slots)	300 mm (11.81 in)	Yes (see "Rack-mounti ng by using only front mounting brackets"	Yes (see "Rack-mounting by using front mounting brackets and a rack shelf")	No
5500-24G-SFP EI (2 slots) 5500-24G-SFP EI TAA (2 slots)	360 mm (14.17 in)	No	Yes (see "Rack-mounting by using front mounting brackets and a rack shelf")	Yes (see "Rack-mounting by using front and rear mounting brackets")
5500-24G-PoE+ EI (2 slots) 5500-24G-PoE+ EI TAA (2 slots) 5500-24G-PoE+ SI (2 slots) 5500-48G-PoE+ EI (2 slots) 5500-48G-PoE+ EI TAA (2 slots) 5500-48G-PoE+ SI (2 slots)	420 mm (16.54 in)	No	Yes (see "Rack-mounting by using front mounting brackets and a rack shelf")	Yes (see "Rack-mounting by using front and rear mounting brackets")

NOTE:

For a switch with a depth greater than 300 mm (11.81 in), the front mounting brackets are not weight-bearing.

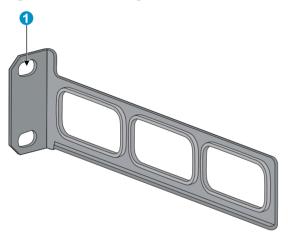
Mounting brackets

Figure 2 Front mounting bracket



(1) Hole for attaching to a rack (by using an M6 screw)(2) Hole for attaching to the switch chassis

Figure 3 Rear mounting bracket



(1) Hole for attaching to a rack (by using an M6 screw)

NOTE:

The M6 screws for attaching the brackets to a rack are user supplied.

Table 4 shows the mounting bracket shipment for different switch models.

Table 4 Mounting bracket kit shipped with the 5500 EI and 5500 SI switches

Chassis	Front mounting brackets	Rear mounting brackets	
5500-24G EI (2 slots)	One pair		
5500-24G EI TAA (2 slots)		N/A	
5500-48G EI (2 slots)			
5500-48G El TAA (2 slots)			
5500-24G SI (2 slots)			
5500-48G SI (2 slots)			

Chassis	Front mounting brackets	Rear mounting brackets
5500-24G-SFP EI (2 slots)	Oracia	One pair
5500-24G-SFP EI TAA (2 slots)	One pair	
5500-24G-PoE+ EI (2 slots)		
5500-24G-PoE+ EI TAA (2 slots)	One pair	One pair
5500-48G-PoE+ EI (2 slots)		
5500-48G-PoE+ EI TAA (2 slots)		
5500-24G-PoE+ SI (2 slots)		
5500-48G-PoE+ SI (2 slots)		

Rack-mounting by using only front mounting brackets

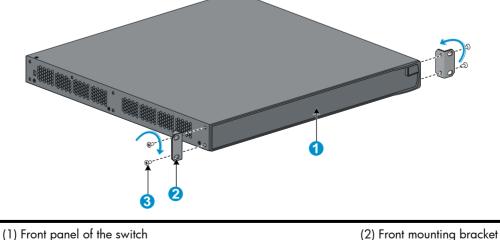
This installation method is available only for the 5500-24G EI (2 slots), 5500-24G EI TAA (2 slots), 5500-48G EI (2 slots), 5500-48G EI TAA (2 slots), 5500-24G SI (2 slots), and 5500-48G SI (2 slots) switches.

This task requires two persons.

To mount a switch in a 19-inch standard rack by using only the front mounting brackets:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Verify that the rack is well grounded and can support the weight of the switch chassis and all its accessories.
- 3. Unpack the front mounting brackets and the screws for attaching the brackets to the switch chassis.
- 4. Align the round holes in one bracket with the holes in the front mounting position of the switch chassis, and use the screws to attach the mounting bracket to the chassis, as shown in Figure 4.
- 5. Repeat the previous step to attach the other mounting bracket to the chassis.

Figure 4 Attaching the front mounting brackets to the chassis



(3) Screw (2) Front mounting bracket

6. Install cage nuts (user-supplied) in the mounting holes in the rack posts.

7. One person holds the switch chassis and aligns the oval holes in the brackets with the mounting holes in the rack posts, and the other person attaches the mounting brackets with M6 screws (user-supplied) to the rack, as shown in Figure 5.

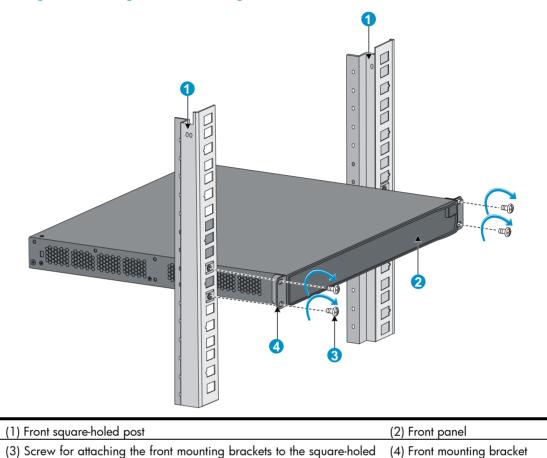


Figure 5 Attaching the front mounting brackets to the rack

Rack-mounting by using front mounting brackets and a rack shelf

This installation method is available for all 5500 EI and 5500 SI switches.

post

To mount a switch in a 19-inch rack by using the front mounting brackets and a rack shelf:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Verify that the rack is well grounded and can support the weight of the switch chassis and all its accessories.
- 3. Attach the rack shelf horizontally in a proper position in the rack.
- 4. Unpack the front mounting brackets and the screws for attaching the brackets to the switch chassis.
- 5. Align the round holes in one bracket with the holes in the front mounting position of the switch chassis, and use the removed screws to attach the mounting bracket to the chassis, as shown in Figure 4.
- 6. Repeat the previous step to attach the other mounting bracket to the chassis.

- 7. Install cage nuts (user-supplied) in the mounting holes in the rack posts.
- 8. Place the switch on the rack shelf, push it into the rack until the brackets touch the rack posts, and attach the mounting brackets with M6 screws (user-supplied) to the rack, as shown in Figure 5.

Rack-mounting by using front and rear mounting brackets

This installation method is available only for the 5500-24G-PoE+ EI (2 slots), 5500-24G-PoE+ EI TAA (2 slots), 5500-48G-PoE+ EI (2 slots), 5500-48G-PoE+ EI (2 slots), 5500-48G-PoE+ SI (2 slots), 5500-24G-SFP EI (2 slots), and 5500-24G-SFP EI TAA (2 slots) switches.

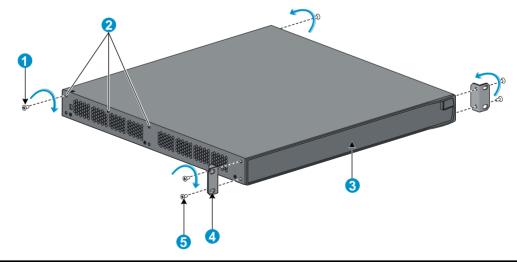
This task requires two persons.

To install the switch in a 19-inch rack by using the front and rear mounting brackets:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Unpack the front mounting brackets and the screws for attaching the brackets to the switch chassis.
- 3. Align the round holes in one front mounting bracket with the holes in the front mounting position of the switch chassis, and use the removed screws to attach the mounting bracket to the chassis, as shown in Figure 4.
- 4. Repeat the previous step to attach the other front mounting bracket to the chassis.
- 5. Unpack the rear mounting brackets and the load-bearing screws.
- 6. Attach the load-bearing screws in one of the rear mounting positions (see callout 2 in Figure 6) as needed.

The 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches have only two of the rear mounting positions.

Figure 6 Attaching the front mounting brackets and load-bearing screws to the switch chassis



(1) Load-bearing screw	(2) Rear mounting positions	
_(3) Front panel	(4) Front mounting bracket	
(5) Screw for attaching the front mounting brackets to the switch		

NOTE:

The rear mounting brackets must closely contact with the load-bearing screws to support the chassis weight.

- 7. Install cage nuts (user-supplied) in the mounting holes in the front and rear rack posts.
- 8. Attach the rear mounting brackets to the rear posts with M6 screws (user supplied), as shown in Figure 7.

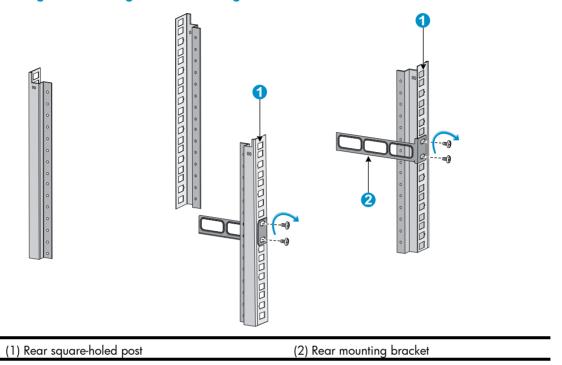
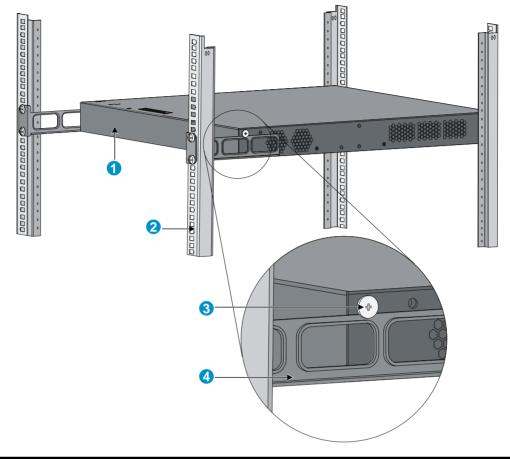


Figure 7 Attaching the rear mounting brackets to a rack

9. One person supports the chassis bottom with one hand, holds the front part of the chassis with the other hand, and pushes the chassis into the rack gently.

Make sure the load-bearing screws closely contact with the upper edges of the rear mounting brackets, as shown in Figure 8.

Figure 8 Mounting the switch in the rack

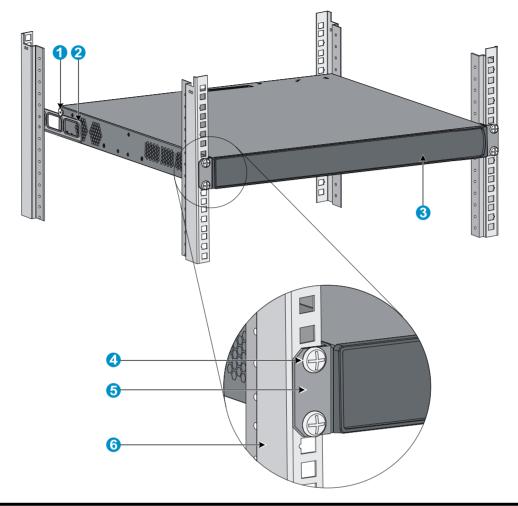


(1) Rear panel	(2) Rear square-holed post
(3) Load-bearing screw	(4) Rear mounting bracket

10. The other person aligns the oval holes in the front brackets with the mounting holes in the front rack posts, and attaches the front mounting brackets with M6 screws (user supplied) to the front rack posts, as shown in Figure 9.

Make sure the front and rear mounting brackets have securely attached the switch in the rack.

Figure 9 Attaching the front brackets to the rack



(1) Load-bearing screw	(2) Rear mounting bracket
(3) Front panel	(4) Screw used to attach front mounting brackets to front brackets
(5) Front mounting bracket	(6) Front square-holed post

Mounting the switch on a workbench

- 1. Verify that the workbench is sturdy and well grounded.
- 2. Place the switch with bottom up, and clean the round holes in the chassis bottom with dry cloth.
- 3. Attach the rubber feet to the four round holes in the chassis bottom.
- 4. Place the switch with upside up on the workbench.

() IMPORTANT:

- Ensure good ventilation and 10 cm (3.9 in) of clearance around the chassis for heat dissipation.
- Avoid placing heavy objects on the switch.

Grounding the switch

▲ WARNING!

Correctly connecting the switch grounding cable is crucial to lightning protection and EMI protection.

The power and grounding terminals in this section are for illustration only.

The power input end of the switch has a noise filter, whose central ground is directly connected to the chassis to form the chassis ground (commonly known as PGND). You must securely connect this chassis ground to the earth so the faradism and leakage electricity can be safely released to the earth to minimize EMI susceptibility of the switch.

You can ground the switch in one of the following ways, depending on the grounding conditions available at the installation site:

- Grounding the switch with a grounding strip
- Grounding the switch with a grounding conductor buried in the earth ground
- Grounding the switch by using the AC power cord

Grounding the switch with a grounding strip

If a grounding strip is available at the installation site, connect the grounding cable to the grounding strip.

MARNING!

Connect the grounding cable to the grounding system in the equipment room. Do not connect it to a fire main or lightning rod.

\land CAUTION:

For the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches, follow the direction shown in Figure 11 to connect the grounding cable to avoid affecting the installation and removal of the power supply.

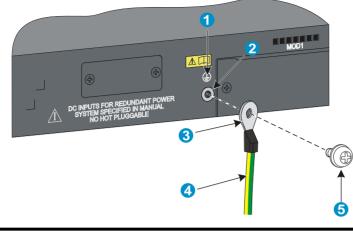
To connect the grounding cable, for example, to an HP 5500-48G EI (2 slots) switch:

- 1. Identify the grounding point (with a grounding sign) on the rear panel of the switch chassis, and remove the grounding screw from the grounding point.
- 2. Attach the grounding screw to the ring terminal of the grounding cable.
- 3. Use a screwdriver to fasten the grounding screw into the grounding screw hole.

Figure 10 shows the grounding terminal position of all 5500 EI and 5500 SI switches but the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots).

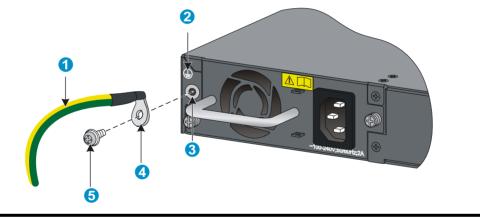
Figure 11 shows the grounding terminal position of the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches.

Figure 10 Connecting the grounding cable to the chassis (I)



(1) Grounding sign	(2) Grounding hole
(3) Ring terminal	(4) Grounding cable
(5) Grounding screw	





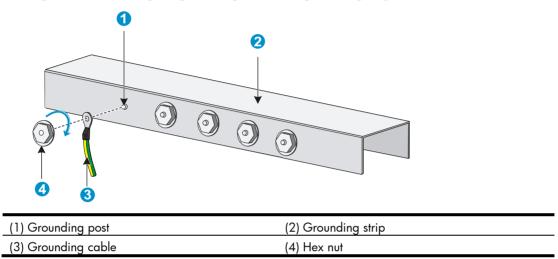
(1) Grounding cable	(2) Grounding sign
(3) Grounding hole	(4) Ring terminal
(5) Grounding screw	

- 4. Remove the hex nut of a grounding post on the grounding strip.
- 5. Cut the grounding cable as appropriate for connecting to the grounding strip.
- 6. Peel 5 mm (0.20 in) of insulation sheath by using a wire stripper, and insert the bare metal part through the black insulation covering into the end of the ring terminal.
- 7. Secure the metal part of the cable to the ring terminal with a crimper, cover the joint with the insulation covering, and heat the insulation covering with a blow dryer to completely cover the metal part.
- 8. Attach the ring terminal or the ring to the grounding strip through the grounding post, and fasten it with the removed hex nut, as shown in Figure 13.

Figure 12 Making a grounding cable connector



Figure 13 Connecting the grounding cable to a grounding strip



Grounding the switch with a grounding conductor buried in the earth ground

If the installation site has no grounding strips, but earth ground is available, hammer a 0.5 m (1.64 ft) or longer angle iron or steel tube into the earth ground to serve as a grounding conductor.

The dimensions of the angle iron must be at least $50 \times 50 \times 5$ mm (1.97 \times 1.97 \times 0.20 in). The steel tube must be zinc-coated and its wall thickness must be at least 3.5 mm (0.14 in).

Weld the yellow-green grounding cable to the angel iron or steel tube and treat the joint for corrosion protection.



6		
(1) Grounding screw	(2) Grounding cable	(3) Earth ground
(4) Joint	(5) Grounding conductor	(6) Chassis rear panel

Grounding the switch by using the AC power cord

If the installation site has no grounding strips or earth ground, you ground an AC-powered switch through the PE wire of the power cord, but must make sure:

- The power cord has a PE terminal.
- The ground contact in the power outlet is securely connected to the ground in the power distribution room or on the AC transformer side.
- The power cord is securely connected to the power outlet.

NOTE:

If the ground contact in the power outlet is not connected to the ground, report the problem and reconstruct the grounding system.

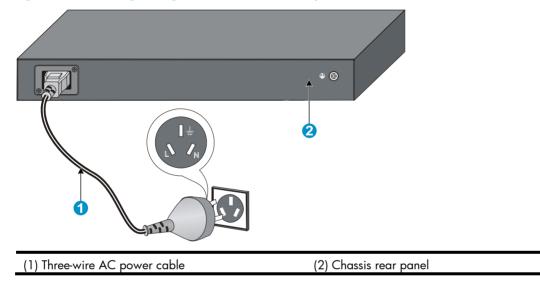


Figure 15 Grounding through the PE wire of the AC power cord

NOTE:

To guarantee the grounding effect, use the grounding cable provided with the switch to connect to the grounding strip in the equipment room as long as possible.

Installing/removing a power supply

This section applies only to the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches.

This section uses a PSR150-A power supply as an example to describe the installation and removal of power supplies.

Installing a power supply

\land CAUTION:

- To prevent damage to the power supply or the connector on the backplane of the powered device, insert the power supply gently. If you encounter a hard resistance while inserting the power supply, pull out the power supply and then insert it again.
- If the captive screw cannot be tightly secured, verify the installation of the power supply.

To install a power supply:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- If the power supply slot is covered by a filler panel, remove the filler panel first.
 Put away the filler panel for future use.
- 3. Unpack the power supply and verify that the power supply model is correct.
- 4. Correctly orient the power supply with the power supply slot, grasp the handle of the power supply with one hand and support its bottom with the other, and slide the power supply slowly along the guide rails into the slot (see callout 1 in Figure 16).

The slot is foolproof. If you cannot insert the power supply into the slot, re-orient the power supply rather than use excessive force to push it in.

5. Fasten the captive screws on the power supply with a Philips screwdriver to secure the power supply in the chassis (see callout 2 in Figure 16).

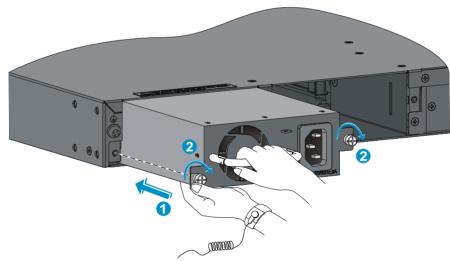


Figure 16 Installing a power supply

NOTE:

If you install only one power supply, install the filler panel over the empty power supply slot for good ventilation.

Removing a power supply

- Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Disconnect the power cord from the power supply and the power outlet.

- Loosen the captive screws of the power supply with a Philips screwdriver until they are completely disengaged.
- 4. Grasp the handle of the power supply with one hand and pull it out a little, support the bottom with the other hand, and pull the power supply slowly along the guide rails out of the slot.

NOTE:

Put away the removed power supply in an antistatic bag for future use.

Connecting the power cord

MARNING!

Make sure the grounding cable has been correctly connected before powering on the switch.

Use Table 5 to identify the power cord connection procedures available for your switch.

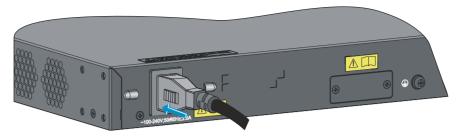
Table 5 Power cord connection methods at a glance

Chassis	Connection procedure
5500-24G EI (2 slots)	
5500-24G EI TAA (2 slots)	AC-input:
5500-48G EI (2 slots)	Connecting the AC power cord
5500-48G EI TAA (2 slots)	RPS input:
5500-24G SI (2 slots)	Connect the switch to a +12 VDC output RPS
5500-48G SI (2 slots)	
5500-24G-PoE+ EI (2 slots)	
5500-24G-PoE+ El TAA (2 slots)	AC-input:
5500-48G-PoE+ El (2 slot)	Connecting the AC power cord
5500-48G-PoE+ El TAA (2 slot)	RPS input:
5500-24G-PoE+ SI (2 slots)	Connecting the switch to a –52 to –55 VDC output RPS
5500-48G-PoE+ SI (2 slots)	
	AC-input PSR150-A/PSR150-A1 power supply:
5500-24G-SFP EI (2 slots)	Connecting the AC power cord
	DC-input PSR150-D/PSR150-D1 power supply:
5500-24G-SFP El TAA (2 slots)	Connecting the PSR150-D/PSR150-D1 to a –48 VDC power source

Connecting the AC power cord

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Connect one end of the AC power cord to the AC-input power receptacle on the switch or the power supply (see Figure 17).
- 3. Connect the other end of the AC power cord to the AC power outlet.

Figure 17 Connecting the AC power cord



Connecting the PSR150-D/PSR150-D1 to a -48 VDC power source

\triangle CAUTION:

Identify the positive (+) and negative (-) marks on the two wires to avoid connection mistakes.

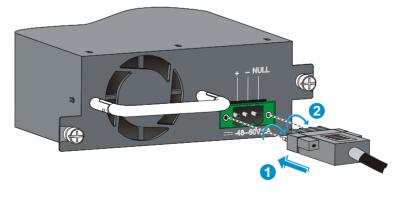
To connect the PSR150-D/PSR150-D1 to a -48 VDC power source:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- Unpack the DC power cord, correctly orient the plug at one end of the cable with the power receptacle on the power supply, and insert the plug into the power receptacle (see callout 1 in Figure 18).

The power receptacle is foolproof. If you cannot insert the plug into the receptacle, re-orient the plug rather than use excessive force to push it in.

- **3.** Tighten the screws on the plug with a flat-blade screwdriver to secure the plug in the power receptacle (see callout 2 in Figure 18).
- 4. Connect the two wires at the other end of the power cord to a -48 VDC power source.

Figure 18 Connecting a -48V DC power cord



NOTE:

You can also connect the PSR150-D/PSR150-D1 to an RPS that provides -48 VDC output. The connection procedure is the same as described in "Connecting the switch to a -52 to -55 VDC output RPS."

Connect the switch to a +12 VDC output RPS

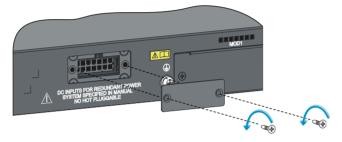
This section applies to the 5500-24G EI (2 slots), 5500-24G EI TAA (2 slots), 5500-48G EI (2 slots), 5500-48G EI TAA (2 slots), 5500-24G EI (2 slots), and 5500-48G EI (2 slots) switches.

To connect these switches to the RPS that provides +12 VDC output:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Loosen the captive screws on the RPS receptacle protective cover and remove the protective cover, as shown in Figure 19.

If you do not use the +12 VDC RPS receptacle, install the protective cover.

Figure 19 Removing the RPS receptacle protective cover

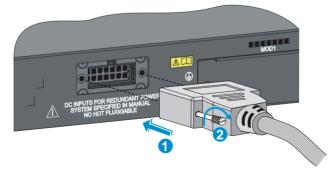


3. Unpack the RPS cable shipped with the RPS, identify the plug for connecting to the switch, correctly orient the plug with the RPS receptacle on the switch chassis, and insert the plug into the receptacle (see callout 1 in Figure 20).

The RPS receptacle is foolproof. If you cannot insert the plug into the receptacle, re-orient the plug rather than use excessive force to push it in.

- 4. Tighten the screws on the plug with a flat-blade screwdriver to secure the plug in the RPS receptacle (see callout 2 in Figure 20).
- 5. Connect the other end of the power cord to the RPS.

Figure 20 Connecting the RPS cable to the +12 VDC RPS power receptacle of the switch



Connecting the switch to a -52 to -55 VDC output RPS

This section applies to the 5500-24G-PoE+ EI (2 slots), 5500-24G-PoE+ EI TAA (2 slots), 5500-48G-PoE+ EI (2 slots), 5500-48G-PoE+ EI TAA (2 slots), 5500-24G-PoE+ SI (2 slots), and 5500-48G-PoE+ SI (2 slots) switches.

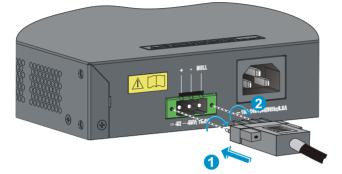
To connect these switches to the RPS that provides -52 to -55 VDC output:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Unpack the RPS cable shipped with the RPS, identify the plug for connecting to the switch, correctly orient the plug with the RPS receptacle on the switch chassis, and insert the plug into the receptacle (see callout 1 in Figure 21).

The RPS receptacle is foolproof. If you cannot insert the plug into the receptacle, re-orient the plug rather than use excessive force to push it in.

- 3. Tighten the screws on the plug with a flat-blade screwdriver to secure the plug in the RPS receptacle (see callout 2 in Figure 21).
- 4. Connect the other end of the power cord to the RPS.

Figure 21 Connecting the RPS cable to the -52 to -55 VDC RPS receptacle of the switch



Installing/removing an interface card

This section applies to all 5500 EI and 5500 SI switches. For the interface cards available for the switches, see "Interface cards."

This section uses the LSPM2SP2P interface card as an example to describe the procedures of installing and removing an interface card.

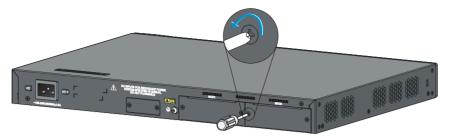
() IMPORTANT:

To set up an HP 5500 EI or 5500 SI IRF fabric, you must install interface cards. To choose a correct slot for an interface card, see "Planning the cabling scheme."

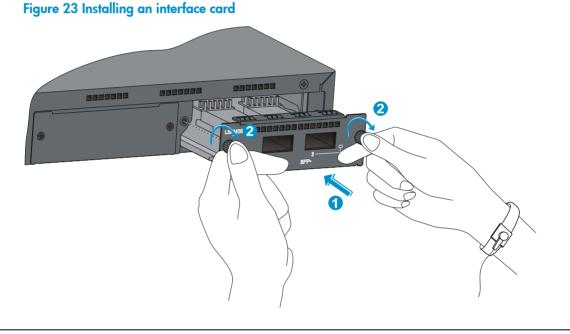
Installing an interface card

- Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Loosen the mounting screws on the filler panel over the interface card slot with a Phillips screwdriver and remove the filler panel.

Figure 22 Removing the filler panel over an interface card slot



- **3.** Hold the captive screws on the front panel of the interface card, and gently push the interface card in along the slot guide rail until the interface card is in close contact with the switch chassis (see callout 1 in Figure 23).
- 4. Tighten the captive screws with a Phillips screwdriver to attach the interface card in the slot (see callout 2 in Figure 23).



NOTE:

- Put away the removed filler panel for future use.
- When you tighten the captive screws, the torque must not be higher than 0.4 N-m.

Removing an interface card

\triangle CAUTION:

- Do not touch the surface-mounted components directly with your hands.
- Do not use too much force during the operation.
- If no new card is to be installed, install the filler panel to prevent dust and ensure good ventilation in the switch.

To remove an interface card:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Use a Phillips screwdriver to completely loosen the captive screws at both sides of the interface card.
- 3. Pull the interface card along the guide rails until it completely comes out of the switch chassis.

Installing/removing a dedicated CX4/SFP+ cable

The dedicated CX4 and SFP+ cables for the 5500 EI and 5500 SI switches are hot swappable.

Installing a dedicated CX4/SFP+ cable

\triangle CAUTION:

The cable bending radius must be at least eight times the cable diameter.

To connect a CX4 or SFP+ cable to a port on a CX4/SFP+ interface card:

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact is well grounded.
- 2. Correctly orient one connector of the cable with the port and insert the cable connector into the port.

Removing a dedicated CX4/SFP+ cable

- 1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is well grounded.
- 2. Hold the cable connector and pull the pull latch of the connector to remove the cable from the switch.

Verifying the installation

After you complete the installation, verify that:

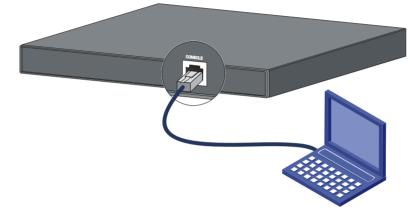
- There is enough space for heat dissipation around the switch, and the rack or workbench is stable.
- The grounding cable is securely connected.
- The correct power source is used.
- The power cords are correctly connected.
- All the interface cables are cabled indoors. If any cable is routed outdoors, verify that the socket strip with lightning protection and lightning arresters for network ports have been correctly connected.

Accessing the switch for the first time

Setting up the configuration environment

The first time you access the switch you must use a console cable to connect a console terminal, for example, a PC, to the console port on the switch.

Figure 24 Connecting the console port to a terminal

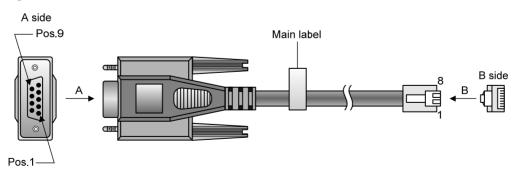


Connecting the console cable

Console cable

A console cable is an 8-core shielded cable, with a crimped RJ-45 connector at one end for connecting to the console port of the switch, and a DB-9 female connector at the other end for connecting to the serial port on the console terminal.

Figure 25 Console cable



Connection procedure

To connect a terminal, for example, a PC, to the switch:

1. Plug the DB-9 female connector of the console cable to the serial port of the PC.

2. Connect the RJ-45 connector to the console port of the switch.

NOTE:

- · Identify the mark on the console port and make sure you are connecting to the correct port.
- The serial ports on PCs do not support hot swapping. If the switch has been powered on, connect the console cable to the PC before connecting to the switch, and when you disconnect the cable, first disconnect from the switch.

Setting terminal parameters

To configure and manage the switch, you must run a terminal emulator program on the console terminal.

The following are the required terminal settings:

- Bits per second 9,600
- Data bits-8
- Parity—None
- Stop bits 1
- Flow control—None
- Emulation—VT100

To set terminal parameters, for example, on a Windows XP HyperTerminal:

- Select Start > All Programs > Accessories > Communications > HyperTerminal. The Connection Description dialog box appears.
- 2. Enter the name of the new connection in the Name field and click OK.

Figure 26 Connection description

Connection Description		? ×
New Connection		
Enter a name and choose ar	icon for the connection:	
<u>N</u> ame:		
Switch		
<u>l</u> con:		
	S 🛞 🖉	2
	OK Car	ncel

3. Select the serial port to be used from the Connect using list, and click OK.

Figure 27 Setting the serial port used by the HyperTerminal connection

Connect To		<u>?</u> ×
🌯 Switch		
Enter details for	the phone number that you want to) dial:
Country/region:	United States of America (1)	7
Ar <u>e</u> a code:	010	
<u>P</u> hone number:		
Co <u>n</u> nect using:	COM1	•
	OK Canc	el

4. Set Bits per second to 9600, Data bits to 8, Parity to None, Stop bits to 1, and Flow control to None, and click OK.

COM	1 Properties			? ×
Po	rt Settings			
	<u>B</u> its per second:	9600		•
	<u>D</u> ata bits:	8		•
	<u>P</u> arity:	None		•
	<u>S</u> top bits:	1		•
	Elow control:	None		•
			Restore	Defaults
	0	к	Cancel	Apply

Figure 28 Setting the serial port parameters

5. Select File > Properties in the HyperTerminal window.

Figure 29 HyperTerminal window

Switch - HyperTerminal							_ _ _ _ ×
Eile Edit Yiew Call Transfer Help Image: Second secon							
Connected 0:00:03 Auto detect	Auto detect	SCROLL	CAPS	NUM	Capture	Print echo	

6. On the **Settings** tab, set the emulation to **VT100** and click **OK**.

Figure 30 Setting terminal emulation in Switch Properties dialog box

Switch Properties	? ×
Connect To Settings	
Function, arrow, and ctrl keys act as Image: Terminal keys Image: Windows keys	
Backspace key sends	
<u>Ctrl+H</u> C <u>D</u> el C Ctrl+ <u>H</u> , Space, Ctrl+H	
Emulation:	
VT100 Terminal <u>S</u> etup	
Tel <u>n</u> et terminal ID: VT100	
Backscroll buffer lines: 500	
Play sound when connecting or disconnecting	
Input Translation	
OK Car	ncel

Powering on the switch

Before powering on the switch, verify that the following conditions are met:

- The power cord is correctly connected.
- The input power voltage meets the requirement of the switch.
- The console cable is correctly connected.
- The configuration terminal (a PC, for example) has started, and its serial port settings are consistent with the console port settings on the switch.

Power on the switch. During the startup process, you can access Boot ROM menus to perform tasks such as software upgrade and file management. The Boot ROM interface and menu options differ with software versions. For more information about Boot ROM menu options, see the software-matching release notes for the device.

After the startup completes, you can access the CLI to configure the switch.

For more information about the configuration commands and CLI, see the configuration guides and command references for the switch.

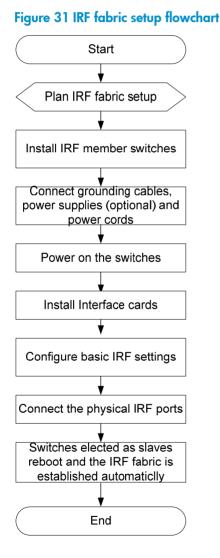
Setting up an IRF fabric

You can use HP Intelligent Resilient Framework (IRF) technology to connect and virtualize 5500 EI switches or 5500 SI switches into a virtual switch called an "IRF fabric" or "IRF virtual device" for flattened network topology, and high availability, scalability, and manageability.

NOTE:

An IRF fabric cannot have both 5500 EI and 5500 SI switches.

IRF fabric setup flowchart



To set up an IRF fabric:

Ste	р	Description	
1.	Plan IRF fabric setup	 Plan the installation site and IRF fabric setup parameters: Planning IRF fabric size and the installation site Identifying the master switch and planning IRF member IDs Planning IRF topology and connections Identifying physical IRF ports on the member switches Planning the cabling scheme 	
2.	Install IRF member switches	See "Installing the switch in a 19-inch rack" and "Mounting the switch on a workbench."	
3.	Connect the grounding cable, power supplies (optional), and power cords	See "Grounding the switch" and "Connecting the power cord." If an HP 5500-24G-SFP EI (2 slots) or 5500-24G-SFP EI TAA (2 slots) switch is used, also see "Installing/removing a power supply."	
4.	Power on the switches	N/A	
5.	Install interface cards	See "Installing/removing an interface card."	
6.	Configure basic IRF settings	See "Configuring basic IRF settings."	
7.	Connect the physical IRF ports	See "Connecting the physical IRF ports." All switches except the master switch automatically reboot, and the IRF fabric is established.	

Planning IRF fabric setup

Planning IRF fabric size and the installation site

Choose switch models and identify the number of required IRF member switches, depending on the user density and upstream bandwidth requirements. The switching capacity of an IRF fabric equals the total switching capacities of all member switches.

NOTE:

As your business grows, you can plug a switch into an IRF fabric to increase the switching capacity without any topology change or replacement.

Identifying the master switch and planning IRF member IDs

Determine which switch you want to use as the master for managing all member switches in the IRF fabric. An IRF fabric has only one master switch. You configure and manage all member switches in the IRF fabric at the command line interface of the master switch.

NOTE:

IRF member switches will automatically elect a master. You can affect the election result by assigning a high member priority to the intended master switch. For more information about master election, see *HF* 5500 El & 5500 SI Switch Series IRF Configuration Guide.

Prepare an IRF member ID assignment scheme. An IRF fabric uses member IDs to uniquely identify and manage its members, and you must assign each IRF member switch a unique member ID.

Planning IRF topology and connections

You can create an IRF fabric in daisy chain topology, or more reliably, ring topology. In ring topology, the failure of one IRF link does not cause the IRF fabric to split as in daisy chain topology. Rather, the IRF fabric changes to a daisy chain topology without interrupting network services.

You connect the IRF member switches through IRF ports. An IRF port is a logical interface for the internal connection between IRF member switches. Each IRF member switch has two IRF ports: IRF-port 1 and IRF-port 2. To use an IRF port, you must bind physical ports to it.

When connecting two neighboring IRF member switches, you must connect the physical ports of IRF-port 1 on one switch to the physical ports of IRF-port 2 on the other switch.

You can bind several physical ports to an IRF port to create an aggregate IRF link for increased bandwidth and availability.

NOTE:

- Figure 32 and Figure 33 show the topologies of an IRF fabric made up of three 5500 EI or 5500 SI switches.
- The IRF port connections in the two figures are for illustration only, and more connection methods are available.

Figure 32 IRF fabric in daisy chain topology

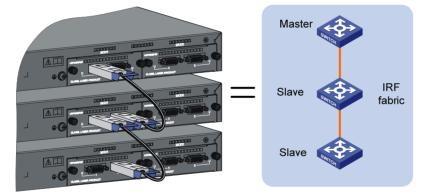
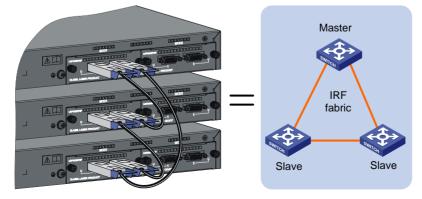


Figure 33 IRF fabric in ring topology



Identifying physical IRF ports on the member switches

Only the 10-GE ports on the IRF-capable interface cards listed in "Interface cards" can provide IRF connections for the 5500 EI and 5500 SI switches. To use the IRF feature, you must order the cards separately.

() IMPORTANT:

All the switches in a ring topology and the non-edge switches in a daisy chain topology must have at least one two-port interface card or two one-port interface cards.

Planning the cabling scheme

When you plan the cabling scheme, follow these guidelines:

- Ports assigned to the same IRF port must be on the same interface card.
- For long-distance connections, use XFP/SFP+ transceiver modules and fibers. For short-distance connections, use CX4/SFP+ cables or twisted-pair cables. For more information, see "Interface cards" and "SFP/SFP+/XFP transceiver modules and SFP+/CX4 cables."
- If 2-port interface cards are used and the IRF links are not aggregate:
 - You can connect the interface card in slot 1 (MOD 1) on a member switch to the MOD 1 or MOD 2 card on its neighboring switch.
 - Connect the left port on one interface card to the right port on the other interface card, as shown in Figure 34.

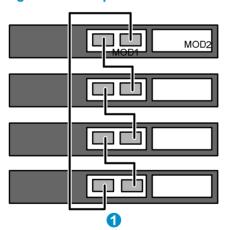
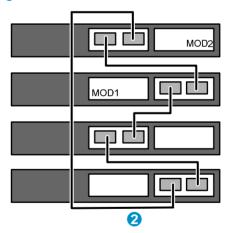
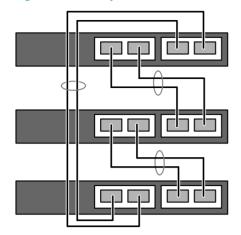


Figure 34 Use 2-port interface cards to set up single-link IRF connection

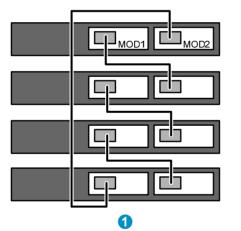


- If 2-port interface cards are used and IRF links are aggregate:
 - Connect the interface card MOD 1 on one switch to the interface card MOD 2 on the other switch.
 - A port on one interface card can connect to any port on the other interface card, as shown in Figure 35. For example, you can connect the left port on one interface card to the left or right port on the other interface card.

Figure 35 Use 2-port interface cards to set up multi-link IRF connection



- If both of the neighboring switches use 1-port interface cards, the port on MOD 1 on one switch must connect to the port on MOD 2 on the other switch (see callout 1 in Figure 36).
- If one switch uses a 1-port interface card but the other switch uses a 2-port interface card:
 - If the 1-port interface card is in the MOD 1 slot, the port on the card must connect to the right port on the 2-port interface card (see callout 2 in Figure 36.)
 - If the 1-port interface card is in the MOD 2 slot, the port on the card must connect to the left port on the 2-port interface card.



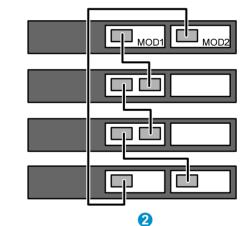


Figure 36 Cable connections for an IRF fabric with 1-port interface cards

Configuring basic IRF settings

After you install the IRF member switches, power on the switches, and log in to each IRF member switch (see *HP 5500 EI & 5500 SI Switch Series Fundamentals Configuration Guide*) to configure their member IDs, member priorities, and IRF port bindings.

Follow these guidelines when you configure the switches:

- Assign the master switch higher member priority than any other switch.
- Bind physical ports to IRF port 1 on one switch and to IRF port 2 on the other switch.
- Execute the **irf-port-configuration active** command to activate the IRF port configuration.
- Execute the display irf configuration command to verify the basic IRF settings.

For more information about configuring basic IRF settings, see HP 5500 EI & 5500 SI Switch Series IRF Configuration Guide.

Connecting the physical IRF ports

Connect the IRF member switches as planned.

NOTE:

Wear an ESD-preventive wrist strap when you connect the physical IRF ports. For how to connect them, see *Pluggable SFP/SFP+/XFP Transceiver Modules Installation Guide*.

Accessing the IRF fabric to verify the configuration

When you are finished configuring basic IRF settings and connecting IRF ports, follow these steps to verify the basic functionality of the IRF fabric:

- 1. Log in to the IRF fabric through the console port of any member switch.
- 2. Create a Layer 3 interface, assign it an IP address, and make sure the IRF fabric and the remote network management station can reach each other.
- Use Telnet, web, or SNMP to access the IRF fabric from the network management station. See HP 5500 EI & 5500 SI Switch Series Fundamentals Configuration Guide.
- 4. Verify that you can manage all member switches as if they were one node.
- 5. Display the running status of the IRF fabric by using the commands in the table bellow.

Task	Command
Display information about the IRF fabric	display irf
Display all members' configurations that take effect after switch reboots	display irf configuration
Display topology information about the IRF fabric	display irf topology

NOTE:

To avoid IP address collision and network problems, configure at least one multi-active detection (MAD) mechanism to detect the presence of multiple identical IRF fabrics and handle collisions. For more information about MAD detection, see *HP 5500 El & 5500 SI Switch Series IRF Configuration Guide*.

Maintenance and troubleshooting

Power supply failure

Built-in power supply failure

Except the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches, all 5500 EI and 5500 SI switches use built-in power supplies and support three input modes: AC input, RPS DC input, and concurrent AC and RPS DC inputs.

You can look at the system status LED and the RPS status LED on the front panel of the switch to identify a power failure. For more information, see "LEDs."

AC input

If the system status LED is off, an AC input failure has occurred. Verify the following items:

- The AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
- The external AC power system is correctly working.
- The operating temperature of the switch is in the normal range, and the power module has good ventilation. Over-temperature can cause the power module to stop working and enter the protection state.

RPS DC input

If the system status LED or RPS status LED is off, an RPS input failure has occurred. Verify the following items:

- The switch is securely connected to the RPS.
- The RPS is correctly working.
- The operating temperature of the switch is in the normal range, and the power supply has good ventilation. Over-temperature can cause the power supply to stop working and enter the protection state).

Concurrent RPS and AC inputs

- 1. If the system status LED is off, the AC power supply and the RPS both have an input failure.
 - Verify the following items:
 - The AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
 - The external AC power system is correctly working.
 - The switch is securely connected to the RPS.
 - The RPS is correctly working.
 - The operating temperature of the switch is in the normal range, and the power supply has good ventilation. Over-temperature can cause the power supply to stop working and enter the protection state.

 If the system status LED is on but the RPS status LED is steady yellow, an AC input failure has occurred.

Verify the following items:

- TThe AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
- The external AC power system is correctly working.
- **3.** If the system status LED is on but the RPS status LED is off, an RPS input failure has occurred. Verify the following items:
 - The switch is securely connected to the RPS.
 - The RPS is correctly working.

NOTE:

If the problem persists, contact the HP technical support for help.

Hot swappable power supply failure

This section applies to the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches.

You can look at the PWR1 or PWR2 LED (see Table 13) on the front panel of an HP 5500-24G-SFP EI (2 slots) or 5500-24G-SFP EI TAA (2 slots) switch and the LEDs on the power supply to identify a power supply failure.

If the power supply system is correctly working, the power supply LEDs are steady green. If the LEDs behave in any other way (see Table 13), verify the following items:

- The power cord is correctly connected.
- The power supply meets the requirement.
- The operating temperature of the switch is in the normal range and the power supply has good ventilation.

NOTE:

If the problem persists, contact your local sales agent or service engineer.

To replace a hot swappable power supply, see "Installing/removing a power supply."

Fan failure

You can look at the system status LED and the seven-segment LED of the switch to identify a fan failure. If both LEDs are behaving as described in Table 6, a fan failure occurs.

Table 6 LED behaviors that identify a fan failure

LED	Mark	State
System status LED	PWR/SYS	Steady red
		The LED flashes F for fan failure.
Seven-segment LED	Unit	

The 5500 EI and 5500 SI switches use built-in fans. If a fan failure occurs, contact the HP technical support for help and do not attempt to fix the problem yourself.

Configuration terminal problems

If the configuration environment setup is correct, the configuration terminal displays booting information when the switch is powered on. If the setup is incorrect, the configuration terminal would display nothing or garbled text.

No terminal display

If the configuration terminal displays nothing after the switch is powered on, verify the following items:

- The power supply is supplying power to the switch.
- The console cable is correctly connected.
- The console cable has no problem and the terminal settings are correct.

Garbled terminal display

If terminal display is garbled, verify that the following settings are configured for the terminal, for example, HyperTerminal:

- **Baud rate** 9,600
- Data bits-8
- Parity-none
- Stop bits 1
- Flow control—none
- Emulation—VT100

Appendix A Chassis views and technical specifications

The HP 5500 EI & 5500 SI Switch Series includes the models in Table 7.

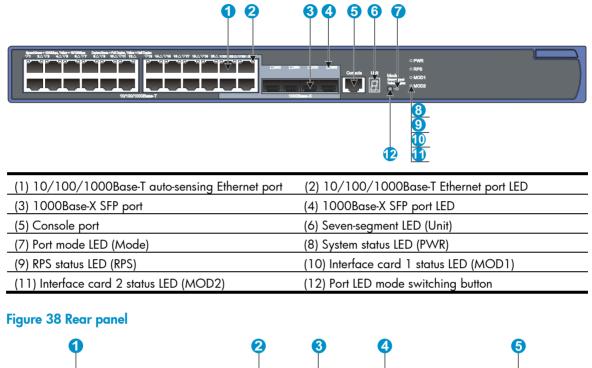
Table 7 Models in the HP 5500 EI & 5500 SI Switch Series

Туре	Product code	HP description	Alias
	JD377A	HP 5500-24G El Switch with 2 Interface Slots	5500-24G EI (2 slots)
	JG250A	HP 5500-24G EI TAA Switch with 2 Interface Slots	5500-24G EI TAA(2 slots)
	JD375A	HP 5500-48G El Switch with 2 Interface Slots	5500-48G EI (2 slots)
	JG251A	HP 5500-48G EI TAA Switch with 2 Interface Slots	5500-48G EI TAA (2 slots)
Non-PoE	JD374A	HP 5500-24G-SFP EI Switch with 2 Interface Slots	5500-24G-SFP EI (2 slots)
	JG249A	HP 5500-24G-SFP EI TAA Switch with 2 Interface Slots	5500-24G-SFP EI TAA (2 slots)
	JD369A	HP 5500-24G SI Switch with 2 Interface Slots	5500-24G SI (2 slots)
	JD370A	HP 5500-48G SI Switch with 2 Interface Slots	5500-48G SI (2 slots)
	JG241A	HP 5500-24G-PoE+ El Switch with 2 Interface Slots	5500-24G-PoE+ EI (2 slots)
	JG252A	HP 5500-24G-PoE+ EI TAA Switch with 2 Interface Slots	5500-24G-PoE+ EI TAA (2 slots)
	JG240A	HP 5500-48G-PoE+ El Switch with 2 Interface Slots	5500-48G-PoE+ EI (2 slots)
РоЕ	JG253A	HP 5500-48G-PoE+ EI TAA Switch with 2 Interface Slots	5500-48G-PoE+ EI TAA (2 slots)
	JG238A	HP 5500-24G-PoE+ SI Switch with 2 Interface Slots	5500-24G-PoE+ SI (2 slots)
	JG239A	HP 5500-48G-PoE+ SI Switch with 2 Interface Slots	5500-48G-PoE+ SI (2 slots)

Chassis views

5500-24G EI (2 slots)/5500-24G EI TAA (2 slots)/5500-24G SI (2 slots)

Figure 37 Front panel



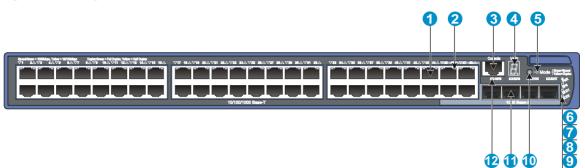
Ť	ŤŤ	Ť			
			• • • • • • • • • • • • • • • • • • •	Mot 2	•
(1) AC power input	(2) RPS	receptacle (shipp	ed with a pro	otective cov	er)
(3) Grounding screw	(4) Inter	face card slot 1 (MOD1)		
(5) Interface card slot 2 (MOD)	2)				

NOTE:

The 5500-24G EI (2 slots), 5500-24G EI TAA (2 slots), and 5500-24G SI (2 slots) switches come with the expansion interface card slots covered by filler panels.

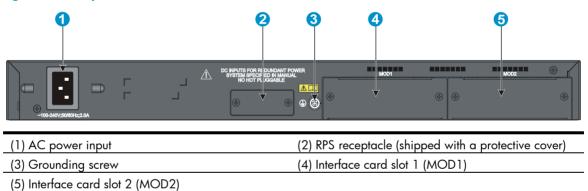
5500-48G EI (2 slots)/5500-48G EI TAA (2 slots)/5500-48G SI (2 slots)

Figure 39 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 10/100/1000Base-T Ethernet port LED
(3) Console port	(4) Seven-segment LED (Unit)
(5) Port mode LED (Mode)	(6) System status LED (PWR)
(7) RPS status LED (RPS)	(8) Interface card 1 status LED (MOD1)
(9) Interface card 2 status LED (MOD2)	(10) Port LED mode switching button
(11) 1000Base-X SFP port	(12) 1000Base-X SFP port LED

Figure 40 Rear panel

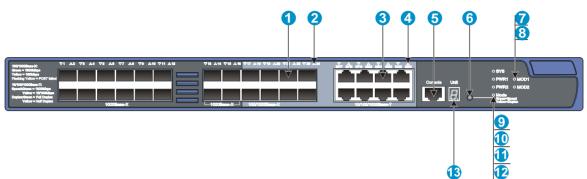


NOTE:

The 5500-48G EI (2 slots), 5500-48G EI TAA (2 slots), and 5500-48G SI (2 slots) switches come with the expansion interface card slots covered by filler panels.

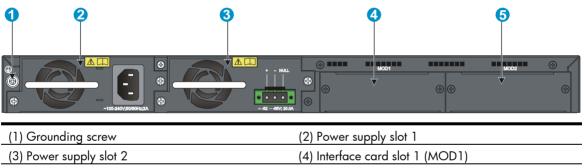
5500-24G-SFP EI (2 slots)/5500-24G-SFP EI TAA (2 slots)

Figure 41 Front panel



(1) SFP port	(2) SFP port LED
(3) 10/100/1000Base-T auto-sensing Ethernet	(4) 10/100/1000Base-T Ethernet port LED
_port	
(5) Console port	(6) Port LED mode switching button
(7) Interface card 1 status LED (MOD1)	(8) Interface card 2 status LED (MOD2)
(9) System status LED (SYS)	(10) Power supply 1 status LED (PWR1)
(11) Power supply 2 status LED (PWR2)	(12) Port mode LED (Mode)
(13) Seven-segment LED (Unit)	

Figure 42 Rear panel



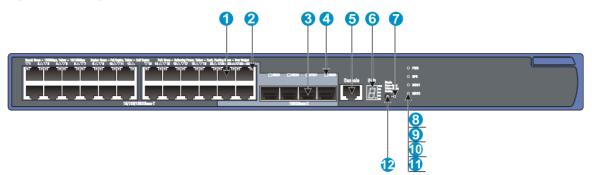
(5) Interface card slot 2 (MOD2)

NOTE:

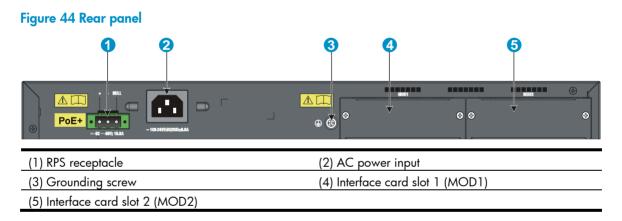
- The 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches come with the expansion interface card slots covered by filler panels.
- The 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches come with one power supply filler panel. If you use only one power supply, install the filler panel over the empty power supply slot to prevent dust and ensure normal ventilation of the chassis. In this figure, a PSR150-A is installed in power supply slot 1 and a PSR150-D is installed in power supply slot 2.

5500-24G-PoE+ EI (2 slots)/5500-24G-PoE+ EI TAA (2 slots)/5500-24G-PoE+ SI (2 slots)

Figure 43 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 10/100/1000Base-T Ethernet port LED
(3) 1000Base-X SFP port	(4) 1000Base-X SFP port LED
(5) Console port	(6) Seven-segment LED (Unit)
(7) Port mode LED (Mode)	(8) System status LED (PWR)
(9) RPS status LED (RPS)	(10) Interface card 1 status LED (MOD1)
(11) Interface card 2 status LED (MOD2)	(12) Port LED mode switching button



NOTE:

The 5500-24G-PoE+ EI (2 slots), 5500-24G-PoE+ EI TAA (2 slots), and 5500-24G-PoE+ SI (2 slots) switches come with the expansion interface card slots covered by filler panels.

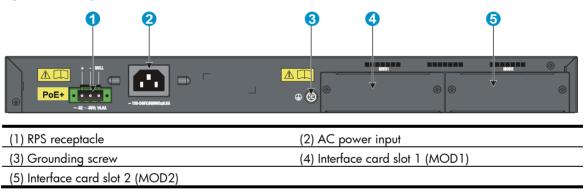
5500-48G-PoE+ EI (2 slots)/5500-48G-PoE+ EI TAA (2 slots)/5500-48G-PoE+ SI (2 slots)

Figure 45 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 10/100/1000Base-T Ethernet port LED
(3) Console port	(4) Seven-segment LED (Unit)
(5) Port mode LED (Mode)	(6) System status LED (PWR)
(7) RPS status LED (RPS)	(8) Interface card 1 status LED (MOD1)
(9) Interface card 2 status LED (MOD2)	(10) Port LED mode switching button
(11) 1000Base-X SFP port	(12) 1000Base-X SFP port LED

Figure 46 Rear panel



NOTE:

The 5500-48G-PoE+ EI (2 slots), 5500-48G-PoE+ EI TAA (2 slots), and 5500-48G-PoE+ SI (2 slots) switches come with the expansion interface card slots covered by filler panels.

Technical specifications

Chassis dimensions and weights

Chassis	Dimensions Dimensions ($H \times W \times D$)	Weight
5500-24G SI (2 slots)	43.6 × 440 × 300 mm (1.72 × 17.32 × 11.81 in)	< 4.5 kg (9.92 lb)

Chassis	Dimensions Dimensions ($H \times W \times D$)	Weight	
5500-24G EI (2 slots)			
5500-24G El TAA (2 slots)			
5500-48G EI (2 slots)	43.6 × 440 × 300 mm (1.72 × 17.32 × 11.81 in)	< 5 kg (11.02 lb)	
5500-48G El TAA (2 slots)	(1.72 × 17.52 × 11.61 m)		
5500-48G SI (2 slots)			
5500-24G-SFP EI (2 slots)	$43.6 \times 440 \times 360 \text{ mm}$		
5500-24G-SFP EI TAA (2 slots)	$(1.72 \times 17.32 \times 14.17 \text{ in})$	< 6 kg (13.23 lb)	
5500-24G-PoE+ SI (2 slots)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in)	< 7.0 kg (15.43 lb)	
5500-24G-PoE+ EI (2 slots)			
5500-24G-PoE+ EI TAA (2 slots)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in)	< 7.5 kg (16.53 lb)	
5500-48G-PoE+ SI (2 slots)	(1.72 × 17.52 × 10.54 m)		
5500-48G-PoE+ EI (2 slots)	$43.6 \times 440 \times 420 \text{ mm}$		
5500-48G-PoE+ EI TAA (2 slots)	(1.72 × 17.32 × 16.54 in)	< 8.0 kg (17.64 lb)	

Ports and interface card slots

Chassis	Console ports	10/100/1000Base-T auto-sensing Ethernet ports	SFP ports	Interafce card slots
5500-24G EI (2 slots)				
5500-24G EI TAA (2 slots) 5500-24G SI (2 slots)	1	24	4	2
5500-24G-PoE+ EI (2 slots)				
5500-24G-PoE+ El TAA (2 slots)	1	24, PoE+	4	2
5500-24G-PoE+ SI (2 slots)				
5500-24G-SFP EI (2 slots)	1	8	24	2
5500-24G-SFP EI TAA (2 slots)	•	-		
5500-48G EI (2 slots)				
5500-48G EI TAA (2 slots)	1	48	4	2
5500-48G SI (2 slots)				
5500-48G-PoE+ EI (2 slots)				
5500-48G-PoE+ EI TAA (2 slots)	1	48, PoE+	4	2
5500-48G-PoE+ SI (2 slots)				

NOTE:

- On an HP 5500-24G-SFP EI (2 slots) or 5500-24G-SFP EI TAA (2 slots) switch, the last eight SFP ports and the eight 10/100/1000Base-T Ethernet ports are copper/fiber combo ports in pairs, as shown in Table 10. They form eight combo interfaces. When one port in a pair is activated, the other port automatically shuts down.
- On any other 5500 El or 5500 SI switch, the last four 10/100/1000Base-T Ethernet ports and the four SFP ports are copper/fiber combo ports in pairs, as shown in Table 10. They form four combo interfaces. When one port in a pair is activated, the other port automatically shuts down.

Environmental specifications

Chassis	Operating temperature	Relative humidity
All chassis	0°C to 45°C (32°F to 113°F)	10% to 90%, noncondensing

Power specifications

Power input types

Chassis	AC-input power RPS receptacle receptacle		Power supply slots
5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots)	N/A	N/A	2 (For the available power supplies, see "Hot swappable power supplies".)
Other 5500 El and 5500 SI switches	1	1	N/A

The RPS can supply power to your switch when the AC power line fails or cannot supply sufficient power.

AC input voltage specifications

Chassis	Rated voltage range	Max voltage range
All chassis	100 VAC to 240 VAC, 50 Hz or 60 Hz	90 VAC to 264 VAC, 47 Hz to 63 Hz

RPS DC input voltage specifications and RPS compatibility

Chassis	RPS input rated voltage range	Compatible RPS	
5500-24G EI (2 slots)			
5500-24G EI TAA (2 slots)			
5500-24G SI (2 slots)	10.8 VDC to 13.2 VDC		
5500-48G EI (2 slots)	10.8 VDC to 13.2 VDC	A-RPS800 (JD183A)	
5500-48G EI TAA (2 slots)			
5500-48G SI (2 slots)			
5500-24G-PoE+ EI (2 slots)			
5500-24G-PoE+ EI TAA (2 slots)			
5500-24G-PoE+ SI (2 slots)	–52 VDC to –55 VDC		
5500-48G-PoE+ EI (2 slots)	-32 VDC 10-33 VDC	A-RPS1600 (JG136A)	
5500-48G-PoE+ EI TAA (2 slots)			
5500-48G-PoE+ SI (2 slots)			

Power consumption specifications for non-PoE switches

Chassis	Minimum power consumption	Maximum power consumption
5500-24G EI (2 slots) 5500-24G EI TAA (2 slots)	36 W	110 W
5500-24G SI (2 slots)	36 W	103 W
5500-24G-SFP EI (2 slots) 5500-24G-SFP EI TAA (2 slots)	PSR150-A/PSR150-A1 (JD362A): 44 W PSR150-D/PSR150-D1 (JD366A): 30 W	115 W
5500-48G EI (2 slots) 5500-48G EI TAA (2 slots)	63 W	155 W
5500-48G SI (2 slots)	55 W	145 W

Power consumption specifications for PoE switches

Chassis	Maximum PoE power per port	Total PoE output	Minimum power consumption	Maximum power consumption (including total PoE output)	
5500-24G-PoE+ EI (2 slots)	30 W	270.11/		591 W at AC input	
5500-24G-PoE+ El TAA (2 slots)	30 VV	370 W	60 W	492 W at RPS DC input	
5500-24G-PoE+ SI (2 slots)	30 W	370 W	62 W	585 W at AC input 491 W at RPS DC input	

Chassis	Maximum PoE power per port	Total PoE output	Minimum power consumption	Maximum power consumption (including total PoE output)
5500-48G-PoE+ EI (2 slots) 5500-48G-PoE+ EI TAA (2 slots)	30 W	370 W at AC input 740 W at RPS DC input (370 W for ports 1 to 24, and 370 W for ports 25 to 48)	85 W	661 W at AC input 930 W at RPS DC input
5500-48G-PoE+ SI (2 slots)	30 W	370 W at AC input 740 W at RPS DC input (370 W for ports 1 to 24, and 370 W for ports 25 to 48)	90 W	651 W at AC input 921 W at RPS DC input

Cooling system

All 5500 EI and 5500 SI switches use built-in fans for heat dissipation, and the airflow is from left to right.

Chassis	Built-in fans
5500-24G EI (2 slots)	
5500-24G EI TAA (2 slots)	
5500-24G SI (2 slots)	4
5500-48G EI (2 slots)	4
5500-48G EI TAA (2 slots)	
5500-48G SI (2 slots)	
5500-24G-PoE+ EI (2 slots)	
5500-24G-PoE+ EI TAA (2 slots)	
5500-24G-PoE+ SI (2 slots)	4
5500-48G-PoE+ EI (2 slots)	6
5500-48G-PoE+ EI TAA (2 slots)	
5500-48G-PoE+ SI (2 slots)	
5500-24G-SFP EI (2 slots)	6 (4 for the system, and 1 for each power
5500-24G-SFP EI TAA (2 slots)	supply)

Appendix B FRUs and compatibility matrixes

This appendix describes the FRUs available for the 5500 EI and 5500 SI switches and their compatibility.

Hot swappable power supplies

This section applies to the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches.

Power supply	Specifications
	 Rated input voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz
	 Max input voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz
PSR150-A (JD362A) PSR150-A1 (JD362A)	 Output voltage: 12 V
	 Max output current: 12.5 A
	 Max output power: 150 W
	 Rated input voltage range: -48 VDC to -60 VDC
	 Max input voltage range: -36 VDC to -72 VDC
PSR150-D (JD366A) PSR150-D1 (JD366A)	 Output voltage: 12 V
. ,	 Max output current: 12.5 A
	 Max output power: 150 W

NOTE:

- The 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches support the mix of a PSR150-A/PSR150-A1 (JD362A) and a PSR150-D/PSR150-D1 (JD366A) power supply.
- For more information about the power supplies, see HP PSR150-A & PSR150-D Series Power Supplies User Guide.

Interface cards

The interface cards in this section are available for all 5500 EI and 5500 SI switches.

Card model	Product code	Description	Support for IRF	Compatible transceiver modules/cables
				See "GE SFP transceiver modules."
ISPM2GP2P	ID367A	Provides two Gbps	Νο	NOTE:
	<u>j</u> 200771	SFP fiber ports		This card does not support the transceiver module coded JD089B.
LSPM2SP2P	JD368B	Provides two 10 Gbps SFP+ fiber ports	Yes	See "10-GE SFP+ transceiver modules" and "SFP+ cables."
LSPM1XP2P	JD359B	Provides two 10 Gbps XFP fiber ports	Yes	See "10-GE XFP transceiver modules."
LSPM1XP1P	JD361B	Provides one 10 Gbps XFP fiber port	Yes	See "10-GE XFP transceiver modules."
LSPM1CX2P	JD360B	Provides two 10 Gbps copper ports	Yes	See "CX4 cables."
LSPM1XGT2P	JG535A	Provides two 1/10GBase-T Ethernet ports	Yes	N/A

NOTE:

For more information about the interface cards, see the user guides for the interface cards.

SFP/SFP+/XFP transceiver modules and SFP+/CX4 cables

NOTE:

- To guarantee the functionality of the SFP/SFP+/XFP ports, use only HP transceiver modules.
- The transceiver modules available for this switch series are subject to change over time. For the most up-to-date list of transceiver modules, consult your HP sales representative or technical support engineer.
- For the transceiver module specifications, see *HP A-Series Switches Transceiver Modules User Guide.* For information about installing a transceiver module, see *SFP/SFP+/XFP Transceiver Modules Installation Guide.*

Product code	Module description	Central wavelength (nm)	Cable/fiber diameter (µm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
			50/125	500	550 m (1804.46 ft)
JD118B	HP X120 1G SFP LC SX	850	50/125	400	500 m (1640.42 ft)
פסווטנ	Transceiver	830	62.5/125	200	275 m (902.23 ft)
			02.3/123	160	220 m (721.78 ft)
			9/125	N/A	10 km (6.21 miles)
JD119B	HP X120 1G SFP LC LX Transceiver	1310	50/125	500, 400	550 m (1804.46 ft)
			62.5/125	500	550 m (1804.46 ft)
JD061A	HP X125 1G SFP LC LH40 1310nm Transceiver	1310	9/125	N/A	40 km (24.86 miles)
JD062A	HP X120 1G SFP LC LH40 1550nm Transceiver	1550	9/125	N/A	40 km (24.86 miles)
JD063B	HP X125 1G SFP LC LH70 Transceiver	1550	9/125	N/A	70 km (43.50 miles)
JD103A	HP X120 1G SFP LC LH100 Transceiver	1550	9/125	N/A	100 km (62.14 miles)
JD098B	HP X120 1G SFP LC BX 10-U Transceiver	TX: 1310nm RX: 1490nm	9/125	N/A	10 km (6.21 miles)
JD099B	HP X120 1G SFP LC BX 10-D Transceiver	TX: 1490nm RX: 1310nm	9/125	N/A	10 km (6.21 miles)
JD089B	HP X120 1G SFP RJ45 T Transceiver	N/A	Category-5 twisted pair	N/A	100 m (328.08 ft)

GE SFP transceiver modules

() IMPORTANT:

You must use the transceiver modules coded JD098B and JD099B in pairs.

FE SFP transceiver modules

Product code	Module Description	Central wavelength (nm)	Fiber diameter (μm)	Maximum transmission distance
	HP X115 100M SFP LC FX	1310	50/125	2 km (1.24 miles)
JD102B	Transceiver	1310	62.5/125	2 km (1.24 miles)

Product code	Module Description	Central wavelength (nm)	Fiber diameter (µm)	Maximum transmission distance
JD120B	HP X110 100M SFP LC LX Transceiver	1310	9/125	15 km (9.32 miles)
JD090A	HP X110 100M SFP LC LH40 Transceiver	1310	9/125	40 km (24.86 miles)
JD091A	HP X110 100M SFP LC LH80 Transceiver	1550	9/125	80 km (49.71 miles)
JD100A	HP X110 100M SFP LC BX 10-U Transceiver	TX: 1310 nm RX: 1550 nm	9/125	15 km (9.32 miles)
JD101A	HP X110 100M SFP LC BX 10-D Transceiver	TX: 1550 RX: 1310	9/125	15 km (9.32 miles)

() IMPORTANT:

You must use the transceiver modules coded JD100A and JD101A in pairs.

10-GE SFP+ transceiver modules

Product code	Module description	Central wavelength (nm)	Fiber diameter (µm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
				2000	300 m (984.25 ft)
	HP X130 10G		50/125	500	82 m (269.03 ft)
JD092B	SFP+ LC SR Transceiver	850		400	66 m (216.54 ft)
	Transcerver		40 E /10E	200	33 m (108.27 ft)
			62.5/125	160	26 m (85.3 ft.)
	HP X130 10G SFP+ LC LRM Transceiver	1310	50/125	1500, 500	220 m (721.78 ft)
JD093B				400	100 m (328.08 ft)
			62.5/125	200, 160	220 m (721.78 ft)
JD094B	HP X130 10G SFP+ LC LR Transceiver	1310	9/125	N/A	10 km (6.21 miles)
JG234A	HP X130 10G SFP+ LC ER 40km Transceiver	1550	9/125	N/A	40 km (24.86 miles)

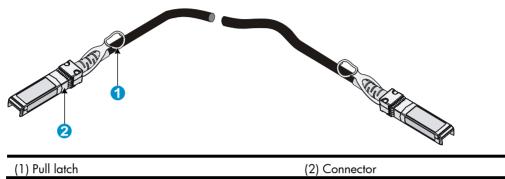
NOTE:

For the SFP+ cables available for connecting the SFP+ ports, see "SFP+ cables."

SFP+ cables

Product code	Cable description	Cable length
JD095C	HP X240 10G SFP+ SFP+ 0.65m DA Cable	0.65 m (2.13 ft)
JD096C	HP X240 10G SFP+ SFP+ 1.2m DA Cable	1.2 m (3.94 ft)
JD097C	HP X240 10G SFP+ SFP+ 3m DA Cable	3 m (9.84 ft)
JG081C	HP X240 10G SFP+ SFP+ 5m DA Cable	5 m (16.40 ft)

Figure 47 SFP+ cable



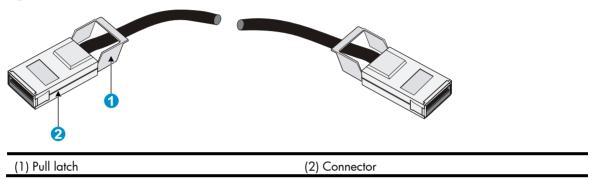
10-GE XFP transceiver modules

Product code	Module description	Central wavelength (nm)	Fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
				2000	300 m (984.25 ft)
	HP X130 10G		50/125	500	82 m(269.03 ft)
JD117B	XFP LC SR	850		400	66 m(216.54 ft)
	Transceiver		62.5/125	220	33 m (108.27 ft)
				160	26 m (85.3 ft)
JD108B	HP X130 10G XFP LC LR 1310nm Transceiver	1310	9/125	N/A	10 km (6.21 miles)
JD121A	HP X135 10G XFP LC ER Transceiver	1550	9/125	N/A	40 km (24.86 miles)
JD107A	HP X130 10G XFP LC ZR 1550nm Transceiver	1550	9/125	N/A	80 km (49.71 miles)

CX4 cables

Product code	Cable description	Connector type	Cable length
JD363B	HP X230 Local Connect 50cm CX4 Cable	4X Infiniband	0.5 m (19.69 in)
JD364B	HP X230 Local Connect 100cm CX4 Cable	4X Infiniband	1 m (39.37 in)
JD365A	HP X230 CX4 to CX4 3m Cable	4X Infiniband	3 m (118.11 in)

Figure 48 CX4 cable



Appendix C Ports and LEDs

Ports

Console port

Every 5500 El or 5500 SI switch has one console port on the front panel.

Table 8 Console port specifications

ltem	Specification	
Connector type	RJ-45	
Compliant standard	EIA/TIA-232	
Transmission baud rate	9600 bps (default) to 115200 bps	
	 Provides connection to an ASCII terminal. 	
Service	 Provides connection to the serial port of a local or remote (through a pair of modems) PC running terminal emulation program. 	

10/100/1000Base-T Ethernet port

Table 9 10/100/1000Base-T Ethernet port specifications

ltem	Specification	
Connector type	RJ-45	
Interface standard	 10 Mbps, half/full duplex 100 Mbps, half/full duplex 1000 Mbps, full duplex MDI/MDI-X, auto-sensing 	
Max transmission distance	100 m (328.08 ft)	
Transmission medium	Category-5 (or above) twisted pair cable	
Standards	IEEE 802.3i, 802.3u, 802.3ab	

SFP port

All 5500 EI and 5500 SI switches have SFP ports.

- For the SFP transceiver modules available for the 5500 EI switches, see "GE SFP transceiver modules" and "FE SFP transceiver modules."
- For the SFP transceiver modules available for the 5500 SI switches, see "GE SFP transceiver modules."

Combo interface

- On the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switch, the last eight SFP ports and the eight 10/100/1000Base-T Ethernet ports are copper/fiber combo ports in pairs, as shown in Table 10. They form eight combo interfaces.
- On all the other 5500 EI and 5500 SI switches, the last four 10/100/1000Base-T Ethernet ports and the four SFP ports are copper/fiber combo ports in pairs, as shown in Table 10. They form four combo interfaces

When one port in a pair is activated, the other port automatically shuts down. For more information about combo interfaces, see HP 5500 EI & 5500 SI Switch Series Configuration Guides.

Chassis	SFP port	10/100/1000Base-T Ethernet port
5500-24G EI (2 slots)	GigabitEthernet 1/0/25	GigabitEthernet 1/0/22
5500-24G EI TAA (2 slots)	GigabitEthernet 1/0/26	GigabitEthernet 1/0/24
5500-24G-PoE+ EI (2 slots)	GigabitEthernet 1/0/27	GigabitEthernet 1/0/21
5500-24G-PoE+ El TAA (2 slots) 5500-24G SI (2 slots) 5500-24G-PoE+ SI (2 slots)	GigabitEthernet 1/0/28	GigabitEthernet 1/0/23
5500-48G EI (2 slots)	GigabitEthernet 1/0/49	GigabitEthernet 1/0/46
5500-48G EI TAA (2 slots)	GigabitEthernet 1/0/50	GigabitEthernet 1/0/48
5500-48G-PoE+ El (2 slots) 5500-48G-PoE+ El TAA (2 slots)	GigabitEthernet 1/0/51	GigabitEthernet 1/0/45
5500-48G SI (2 slots) 5500-48G-PoE+ SI (2 slots)	GigabitEthernet 1/0/52	GigabitEthernet 1/0/47
	GigabitEthernet 1/0/17	GigabitEthernet 1/0/25
	GigabitEthernet 1/0/18	GigabitEthernet 1/0/26
	GigabitEthernet 1/0/19	GigabitEthernet 1/0/27
5500-24G-SFP EI (2 slots)	GigabitEthernet 1/0/20	GigabitEthernet 1/0/28
5500-24G-SFP EI TAA (2 slots)	GigabitEthernet 1/0/21	GigabitEthernet 1/0/29
	GigabitEthernet 1/0/22	GigabitEthernet 1/0/30
	GigabitEthernet 1/0/23	GigabitEthernet 1/0/31
	GigabitEthernet 1/0/24	GigabitEthernet 1/0/32

Table 10 Copper/fiber combo ports in pairs

LEDs

Table 11 LEDs at a glance

LED	Availability
System status LED	Entire series
Provence and the LED.	5500-24G-SFP EI (2 slots)
Power supply status LEDs	5500-24G-SFP EI TAA (2 slots)

LED	Availability
RPS status LED	Entire series (except the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots))
Port mode LED	Entire series
Seven-segment LED	Entire series
10/100/1000Base-T Ethernet port LED	Entire series
SFP port status LED	Entire series
Interface card status LED	Entire series

System status LED

The system status LED shows the operating status of the switch.

Table 12 System status LED description

LED mark	Status	Description
	Steady green	The switch is operating correctly.
	Flashing green (1 Hz)	The switch is performing power-on self test (POST).
SYS/PWR	Steady red	POST has failed.
	Flashing yellow (1 Hz)	Some ports have failed to pass POST.
	Off	The switch is powered off.

Power supply status LEDs

Only the 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches have power supply status LEDs to show the operating status of the power supplies in the power supply slots.

Table 13 Hot swappable power supply status LED description

LED	Status	Description
PWR1 PWR2	Steady green	A power supply is installed in the power supply slot, and the power output is normal.
	Steady yellow	A power supply is installed in the power supply slot, but the power supply is experiencing an output error or is not powered on.
	Off	No power supply is installed in the power supply slot.

RPS status LED

The RPS status LED shows the operating status of the RPS DC input.

The 5500-24G-SFP EI (2 slots) and 5500-24G-SFP EI TAA (2 slots) switches do not have an RPS status LED.

LED mark	Status	Description
	Steady green	Both the RPS DC input and the AC input are normal, or an RPS is connected and the AC input is normal.
RPS	Steady yellow	The RPS DC input is normal, but the AC input is disconnected or has failed.
	Off	No RPS is connected.

Table 14 RPS status LED description for the non-PoE switches

Table 15 RPS status LED description for the PoE switches

LED mark	Status	Description
	Steady green	Both the RPS DC input and the AC input are normal.
RPS	Steady yellow	The RPS power input is normal, but the AC input is disconnected or has failed.
	Off	The RPS power input is abnormal or no RPS is connected.

Port mode LED

The port mode LED indicates the type of information that the network port LEDs are showing. You can use the port LED mode switching button to change the type of displayed port information.

Table 16	Port mod	le LED d	lescription
----------	----------	----------	-------------

LED mark	Status	Description
	Steady green	The network port LEDs are showing port rates.
Mode	Flashing green (1 Hz) (available only for the PoE+ switch models)	The network port LEDs are showing the status of PoE power supply on the ports.
	Steady yellow	The network port LEDs are showing duplex modes.

Seven-segment LED

The seven-segment LED, together with the system status LED, shows detailed system operating information (see Table 17).

The seven-segment LED can also show the total PoE output power as a percentage of the maximum PoE output power that a PoE switch can supply (see Table 18). The PoE switches include 5500-24G-PoE+ EI (2 slots), 5500-24G-PoE+ EI TAA (2 slots), 5500-24G-PoE+ SI (2 slots), 5500-48G-PoE+ EI (2 slots), 5500-48G-PoE+ EI (2 slots), and 5500-48G-PoE+ SI (2 slots).

Table 17 Seven-segment LED description (I)

System status LED (PWR/SYS) status	Seven-segment LED (Unit) status	Description
	The LED displays numbers one by one.	POST is running, and the LED displays the
Flashing green		ongoing test item ID.

System status LED (PWR/SYS) status	Seven-segment LED (Unit) status	Description
Flashing red	The LED displays flashing numbers.	POST has failed, and the LED flashes the ID of the failed test item.
Flashing green	A bar rotates clockwise around the LED.	Software is loading.
Steady red	The LED displays a flashing F character.	The switch is experiencing a fan failure.
Steady red	The LED displays a flashing t character.	The switch is in an over-temperature condition.
Steady green	The LED displays a capital C character.	The switch is the command switch in a cluster.
	The LED displays an S character.	The switch is a member switch in a cluster.
	The LED displays a lowercase c character.	The switch is a candidate switch for a cluster.
	The LED displays a number.	The member ID of the switch in an IRF fabric.

Table 18 Seven-segment LED description (II)

Port mode LED	System status LED	Seven-segment LED (Unit)	Description
(Mode) status	(PWR) status	status	
Flashing green (1 Hz) (PoE mode)	Steady green	The LED displays different signs.	For example, the sign indicates that the switch is outputting 0 to 20% of the maximum PoE output power.

10/100/1000Base-T Ethernet port LED

Each 10/100/1000Base-T auto-sensing Ethernet port has a status LED to show port operating status and activities. The port mode LED indicates the type of information (for example, port rate or duplex mode) that the port LEDs are showing. You can use the port LED mode switching button to change the type of displayed port information.

Port mode LED (Mode) status	Port LED status	Description
	Steady green	The port is operating at 1000 Mbps. The port status LED fast flashes when the port is sending or receiving data.
Steady green (rate mode)	Steady yellow	The port is operating at 10/100 Mbps. The port status LED fast flashes when the port is sending or receiving data.
	Flashing yellow (3 Hz)	POST has failed on the port.
	Off	No link is present on the port.
	Steady green	PoE power supply is normal.
	Flashing green (1 Hz)	The device attached to the port requires power higher than the maximum or currently available PoE output power on the port.
Flashing green (1 Hz) (PoE		The port is experiencing a PoE failure.
mode, available only for PoE switches)	Steady yellow	The port is not supplying power, because the device attached to the port is not a powered device.
	Flashing yellow (3 Hz)	POST has failed on the port.
	Off	The port is not supplying PoE power.
	Steady green	The port is operating in full duplex mode. The port status LED fast flashes when the port is sending or receiving data.
Steady yellow (duplex mode)	Steady yellow	The port is operating in half duplex mode. The port status LED fast flashes when the port is sending or receiving data.
	Flashing yellow (3 Hz)	POST has failed on the port.
	Off	No link is present on the port.

Table 19 10/100/1000Base-T auto-sensing Ethernet port LEDs description

SFP port status LED

Each SFP port has a status LED to show port operating status and activities. The port mode LED indicates the type of information (for example, port rate or duplex mode) that the port LEDs are showing. You can use the port LED mode switching button to change the type of displayed port information.

Table 20 SFP port LEDs description

Port mode LED (Mode) status	Port LED status	Description
Steady green (rate mode) or	Steady green	The port is operating at 1000 Mbps. The port status LED fast flashes when the port is sending or receiving data.
flashing green (1 Hz, PoE mode)	Steady yellow (available only on the 5500 El switches)	The port is operating at 100 Mbps. The port status LED fast flashes when the port is sending or receiving data.

Port mode LED (Mode) status	Port LED status	Description
	Flashing yellow (3 Hz)	POST has failed on the port.
	Off	No link is present on the port.
Steady yellow (duplex	Steady green	The port is operating in full duplex mode. The port status LED fast flashes when the port is sending or receiving data.
mode)	Flashing yellow (3 Hz)	POST has failed on the port.
	Off	No link is present on the port.

Interface card status LED

Table 21 Interface card status LEDs description

LED mark	Status	Description
MOD1 MOD2	Green	The interface card is in position and operating correctly.
	Flashing yellow	The switch does not support the interface card model, or the interface card has failed.
	Off	The expansion interface card slot is empty.

Support and other resources

Contacting HP

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

http://www.hp.com/go/wwalerts

After registering, you will receive email notification of product enhancements, new driver versions, firmware updates, and other product resources.

Related information

Documents

To find related documents, browse to the Manuals page of the HP Business Support Center website:

http://www.hp.com/support/manuals

- For related documentation, navigate to the Networking section, and select a networking category.
- For a complete list of acronyms and their definitions, see HP A-Series Acronyms.

Websites

- HP.com <u>http://www.hp.com</u>
- HP Networking <u>http://www.hp.com/go/networking</u>

- HP manuals <u>http://www.hp.com/support/manuals</u>
- HP download drivers and software http://www.hp.com/support/downloads
- HP software depot <u>http://www.software.hp.com</u>
- HP Education <u>http://www.hp.com/learn</u>

Conventions

This section describes the conventions used in this documentation set.

Command conventions

Convention	Description
Boldface	Bold text represents commands and keywords that you enter literally as shown.
Italic	Italic text represents arguments that you replace with actual values.
[]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x y }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x y]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x y } *	Asterisk-marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
[x y]*	Asterisk-marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in bold text. For example, the New User window appears; click OK .
>	Multi-level menus are separated by angle brackets. For example, File > Create > Folder .

Symbols

Convention	Description
	An alert that calls attention to important information that if not understood or followed can result in personal injury.
	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
	An alert that calls attention to essential information.

Convention	Description
NOTE	An alert that contains additional or supplementary information.
Q TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
ROUTER	Represents a routing-capable device, such as a router or Layer 3 switch.
SWITCH	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.

Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.

Index

$\underline{ACEFGHILMPRSTV}$

A

Accessing the IRF fabric to verify the configuration, 34

С

Chassis views, 39 Configuration terminal problems, 37 Configuring basic IRF settings, 33 Connecting the console cable, 24 Connecting the physical IRF ports, 34 Connecting the power cord, 18 Contacting HP, 61 Conventions, 62

E

Environmental specifications, 45 Examining the installation site, 1

F

Fan failure, 36

G

Grounding the switch, 12

Η

Hot swappable power supplies,48

Installation tools,3 Installing the switch in a 19-inch rack,5 Installing/removing a power supply, 16 Installing/removing an interface card,21 Interface cards,48 IRF fabric setup flowchart,29

L

LEDs, 55

Μ

Mounting the switch on a workbench, 12

P

Planning IRF fabric setup, 30 Ports, 54 Power specifications, 45 Power supply failure, 35 Powering on the switch, 28

R

Related information, 61

S

Safety recommendations, 1 Setting terminal parameters, 25 Setting up the configuration environment, 24 SFP/SFP+/XFP transceiver modules and SFP+/CX4 cables, 49

T

Technical specifications,43

V

Verifying the installation, 23