HP A5120 EI & A5120 SI Switch Series

Installation Guide

Abstract

This document guides you through installation of HP A Series products, including installing the device, connecting to the network, hardware management, and troubleshooting.

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Legal and notice information

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Preparing for installation

The HP A5120 EI Switch Series includes the models in Table 1, and the HP A5120 SI Switch Series includes the models in Table 2.

Table 1 Models in the HP A5120 EI Switch Series

Type	Product code	HP description	Alias
Non-PoE	JE066A	HP A5120-24G EI Switch	A5120-24G EI
	JE067A	HP A5120-48G EI Switch	A5120-48G EI
	JE068A	HP A5120-24G EI Switch with 2 Interface Slots	A5120-24G EI (2 slots)
	JG245A	HP A5120-24G EI TAA Switch with 2 Interface Slots	A5120-24G EI TAA (2 slots)
	JE069A	HP A5120-48G EI Switch with 2 Interface Slots	A5120-48G EI (2 slots)
	JG246A	HP A5120-48G EI TAA Switch with 2 Interface Slots	A5120-48G EI TAA (2 slots)
PoE	JG236A	HP A5120-24G-PoE+ EI Switch with 2 Interface Slots	A5120-24G-PoE+ EI (2 slots)
	JG247A	HP A5120-24G-PoE+ EI TAA Switch with 2 Interface Slots	A5120-24G-PoE+ EI TAA (2 slot)
	JG237A	HP A5120-48G-PoE+ EI Switch with 2 Interface Slots	A5120-48G-PoE+ EI (2 slots)
	JG248A	HP A5120-48G-PoE+ EI TAA Switch with 2 Interface Slots	A5120-48G-PoE+ EI TAA (2 slots)

Table 2 Models in the HP A5120 SI Switch Series

Type	Product code	HP description	Alias
Non-PoE	JE073A	A5120-16G SI	A5120-16G SI
	JE074A	A5120-24G SI	A5120-24G SI
	JE072A	A5120-48G SI	A5120-48G SI
PoE	JG092A	A5120-24G-PPoE+ SI	A5120-24G-PPoE+ SI
	JG091A	A5120-24G-PoE+ SI	A5120-24G-PoE+ SI

Safety recommendations

⚠ WARNING!

Read all of the safety instructions in the *Compliance and Safety Guide* supplied with your device before installation and operation.

This section provides general recommendations. For more information, see the *Compliance and Safety Guide*.

- Turn off all power and remove all power cables before opening the chassis.
- Unplug all power and external cables before moving the chassis.
- Locate the emergency power-off switch before installation and shut off power immediately if necessary.
- Always wear an ESD-preventive wrist strap when installing the device.
- Do not stare into the open optical interface. The high-power density light can burn the retina.
- Use a good grounding system to protect your router against lightning shocks, interference, and ESD. This is essential to the operating reliability of your switch.
- Make sure that the resistance between the chassis and the ground is less than 1 ohm.

Installation site requirements

The A5120 EI and A5120 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.

The following tables provide information about temperature, humidity, dust concentration limits, and air quality requirements.

Table 3 Temperature and humidity requirements

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

Table 4 Dust concentration limit in the equipment room

Substance	Concentration limit (particles/m^3)
Dust	≤ 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 5.

Table 5 Harmful gas limits in the equipment room

Gas	Maximum concentration (mg/m^3)
SO_2	0.2
H_2S	0.006
NH_3	0.05
Cl_2	0.01

Rack-mounting requirements

Before rack-mounting a switch, make sure the rack meets the following requirements:

- HP recommends that you mount a switch in an open rack. If you mount a switch in a closed rack, make sure there is a good heat dissipation system.
- The rack is steady enough to support the switch and accessories.
- The switch fits the rack size. Leave some space beside the left and right panels of the switch for chassis heat dissipation.

Installation tools

The following installation tools are user-supplied.

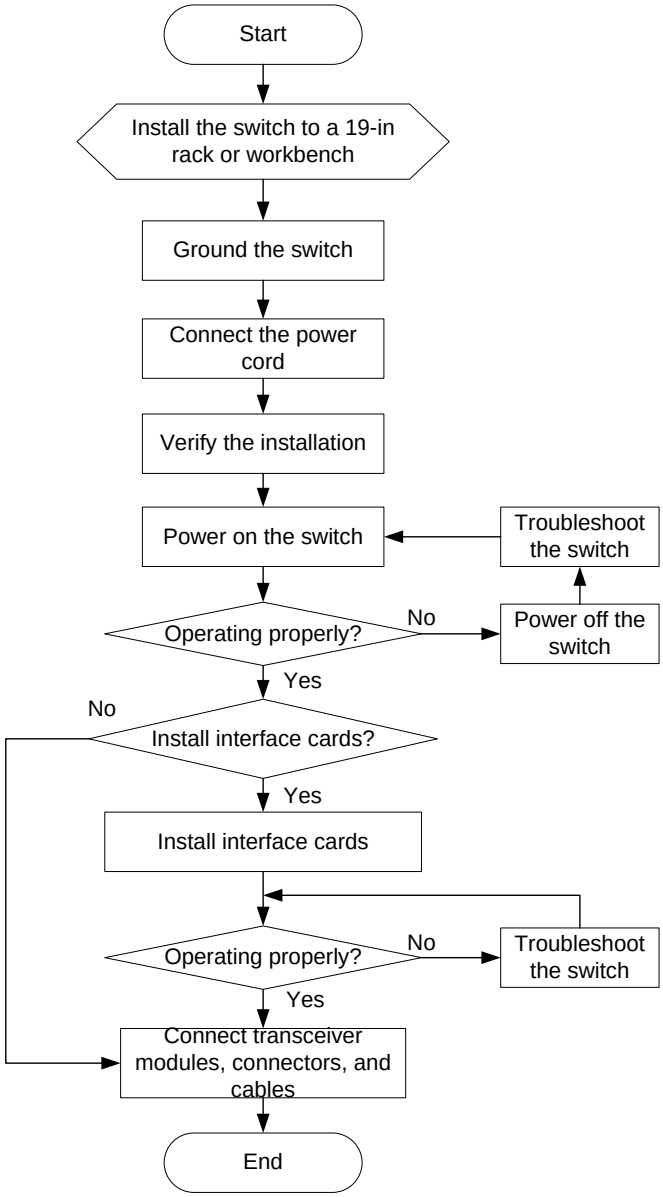
- Flathead screwdriver
- Phillips screwdriver
- Needle-nose pliers
- Wire-stripping pliers
- Diagonal pliers
- ESD-preventive wrist strap
- Blow dryer (optional; for heating insulation for OT terminal joint when making a grounding wire)

Installing the switch

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 HP Support for permission. Otherwise, HP shall not be liable for any consequence caused thereby.

Figure 1 Hardware installation flow



Rack-mounting the A5120 EI switch in a 19-inch rack

CAUTION:

Switches with 420 mm (16.54 in) depth require either a rack shelf or rear mounting brackets. Front mounting brackets alone cannot support the weight of these switches.

Table 6 shows installation methods for mounting switches of different depths in a 19-inch standard rack. The mounting position depends on the depth of the rack.

Table 6 Installation methods

Chassis	Depth	Use front mounting brackets only	Use front mounting brackets and a rack shelf	Use front and rear mounting brackets
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots) A5120-24G EI A5120-48G EI	300 mm (11.81 in)	Yes (see "Rack-mounting using only front mounting brackets"	Yes (see "Rack-mounting using front mounting brackets and a rack shelf")	No
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	420 mm (16.54 in)	No	Yes (see "Rack-mounting using front mounting brackets and a rack shelf")	Yes (see "Rack-mounting by using front and rear mounting brackets")

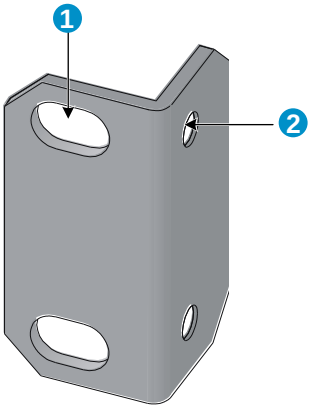
Mounting brackets

NOTE:

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

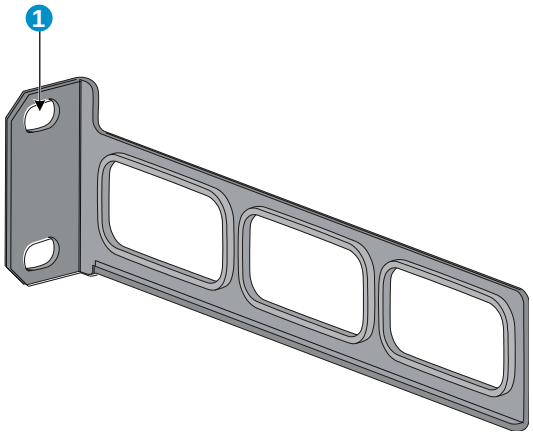
Mounting bracket views

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)

Mounting brackets shipped with different switch models

Table 7 shows the mounting brackets included with different switch models.

Table 7 Mounting bracket kit shipped with the A5120 EI switches

Chassis	Front mounting brackets	Rear mounting brackets
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots) A5120-24G EI A5120-48G EI	One pair	N/A

Chassis	Front mounting brackets	Rear mounting brackets
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	One pair	One pair

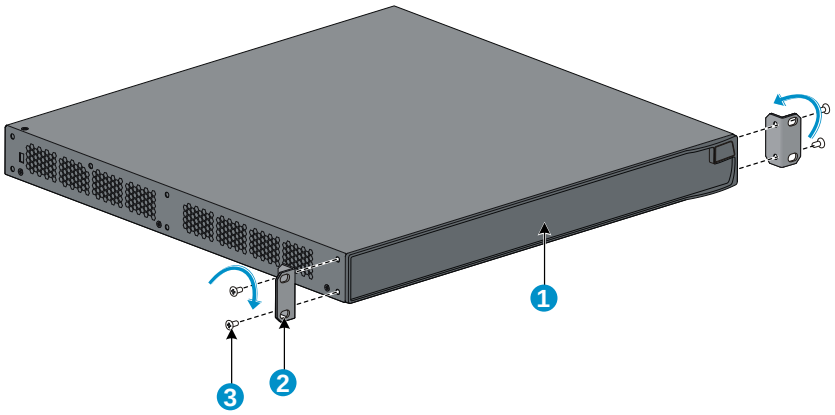
Rack-mounting using only front mounting brackets

Use this installation method only for A5120-24G EI (2 slots), A5120-24G EI TAA (2 slots), A5120-48G EI (2 slots), A5120-48G EI TAA (2 slots), A5120-24G EI, and A5120-48G EI switches.

To mount a switch in a 19-inch standard rack using only front mounting brackets (requires two people):

1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.
2. Check that the rack is properly 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 fasten the mounting brackets to the chassis, as shown in Figure 4.

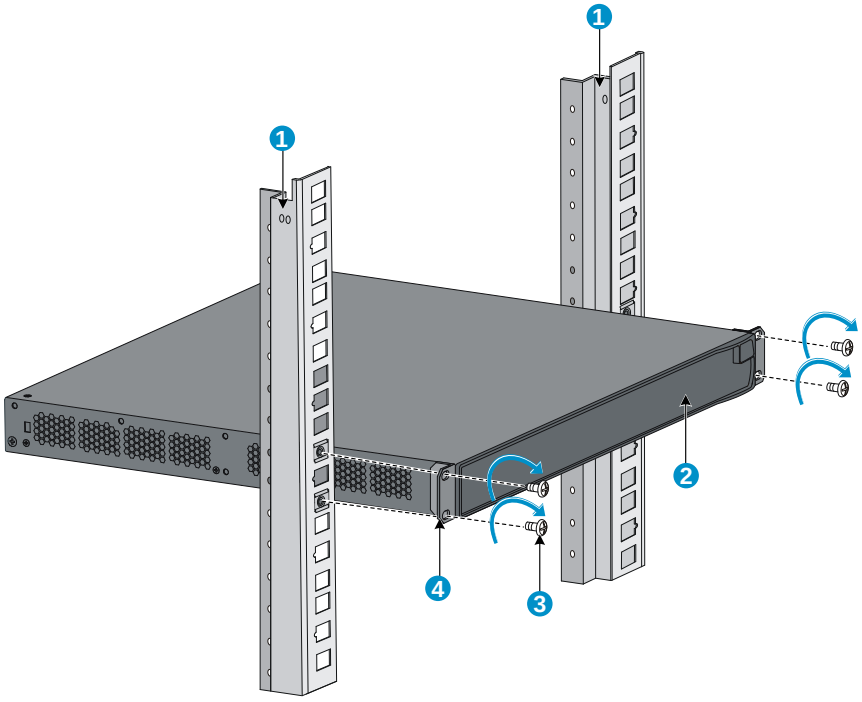
Figure 4 Attach the front mounting brackets to the chassis



(1) Front panel of the switch	(2) Front mounting bracket
(3) Screw	

5. Install cage nuts (user-supplied) in the mounting holes in the rack posts.
6. This step requires two people.
   a. One person holds the switch chassis and aligns the oval holes in the brackets with the mounting holes in the rack posts.
   b. The other person fastens the mounting brackets to the rack with user-supplied M6 screws, as shown in Figure 5.

Figure 5 Attach the front mounting brackets to the rack



(1) Front square-holed post	(2) Front panel
(3) Screw for fastening the bracket to the square-holed post	(4) Front mounting bracket

Rack-mounting using front mounting brackets and a rack shelf

This installation method can be used for all A5120 EI switches.

To mount a switch in a 19-inch rack 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 properly grounded.
2. Check that the rack is properly grounded and can support the weight of the switch chassis and all its accessories.
3. Install the rack shelf horizontally in an appropriate position in the rack.
4. Unpack the front mounting brackets and the screws for fastening 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 fasten 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 fasten the mounting brackets with M6 screws (user-supplied) to the rack, as shown in Figure 5.

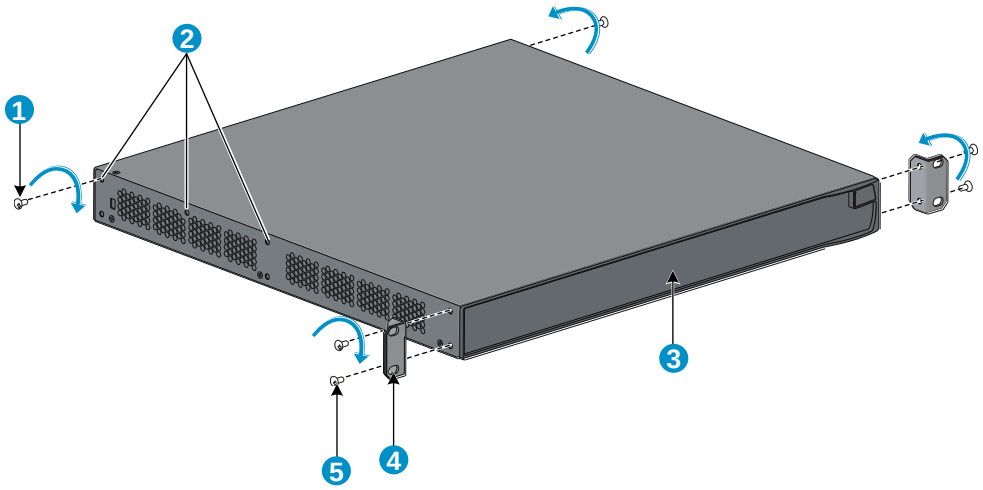
Rack-mounting by using front and rear mounting brackets

This installation method is available only for the A5120-24G-PoE+ EI (2 slots), A5120-24G-PoE+ EI TAA (2 slots), A5120-48G-PoE+ EI (2 slots), and A5120-48G-PoE+ EI TAA (2 slots) switches.

This task requires two people. 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 properly grounded.
2. Unpack the front mounting brackets and the screws for fastening the brackets to the switch chassis.
3. Fasten the front mounting brackets to chassis by aligning the round holes in the brackets with the holes in the front mounting position of the switch chassis, and fastening them with the removed screws, as shown in Figure 4.
4. Unpack the rear mounting brackets and the load-bearing screws.
5. Fasten the load-bearing screws in one of the rear mounting positions (see callout 2 in Figure 6) as needed.

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



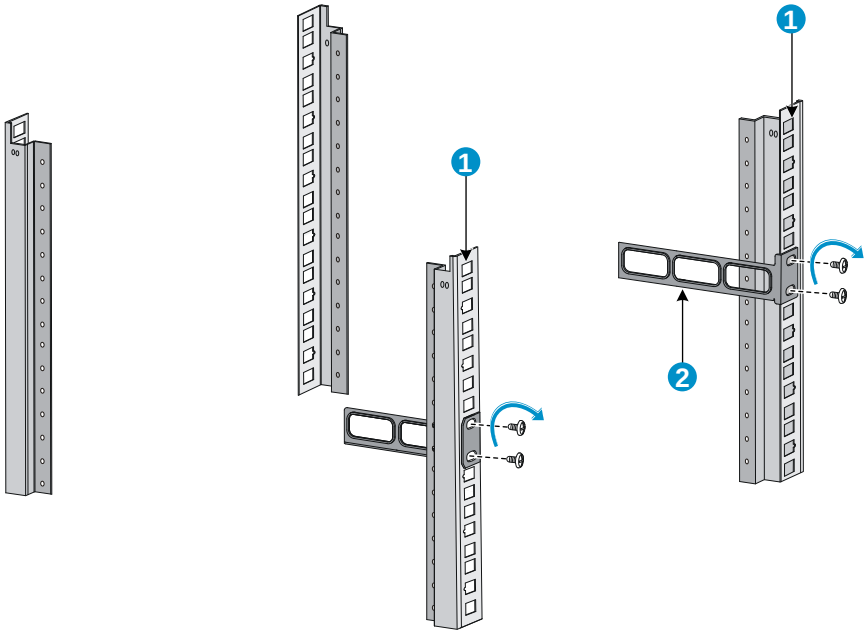
(1) Load-bearing screw	(2) Rear mounting positions
(3) Front panel	(4) Front mounting bracket
(5) Screw for fastening the front mounting bracket to the switch	

NOTE:

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

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

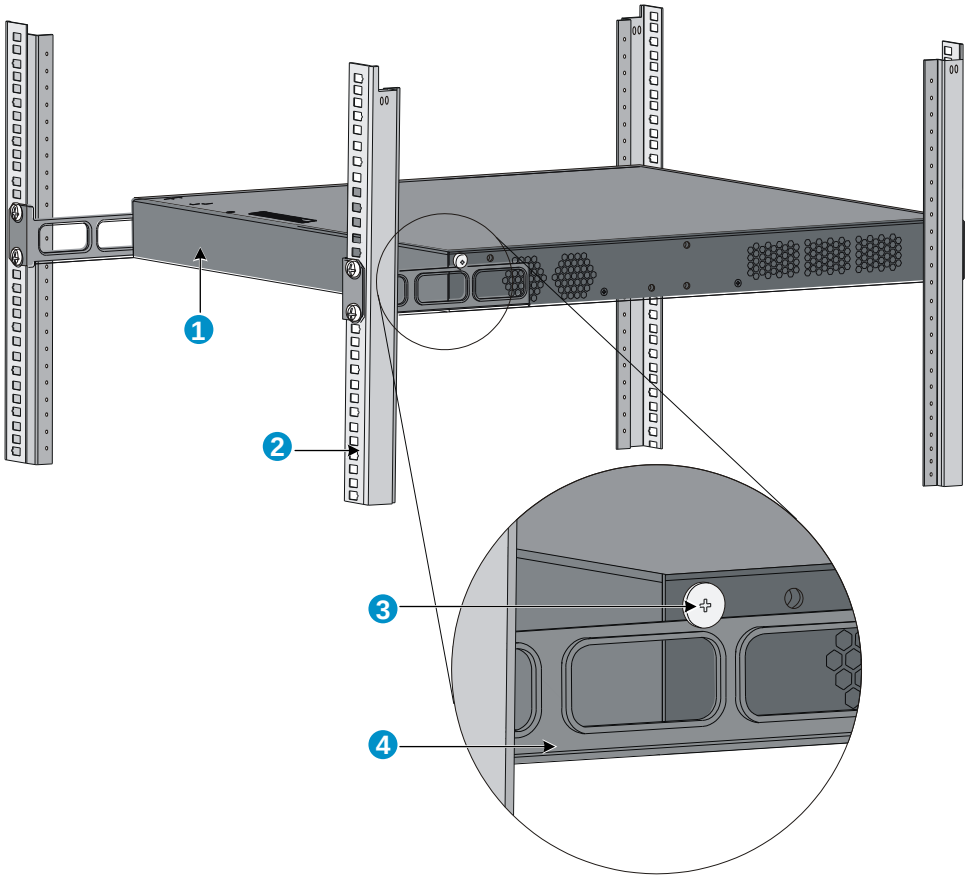
Figure 7 Attach the rear mounting brackets to a rack



(1) Rear square-holed post	(2) Rear mounting bracket

8. One person lifts the chassis, supporting it with one hand underneath and the other hand holding the front.
   a. Gently push the chassis into the rack so that the load-bearing screws fit snugly over the upper edges of the rear mounting brackets.
   b. Verify that the load-bearing screws fit snugly over the upper edges of the rear mounting brackets, as shown in Figure 8.
   c. Continue to support the chassis until its front brackets are securely fastened to the rack.

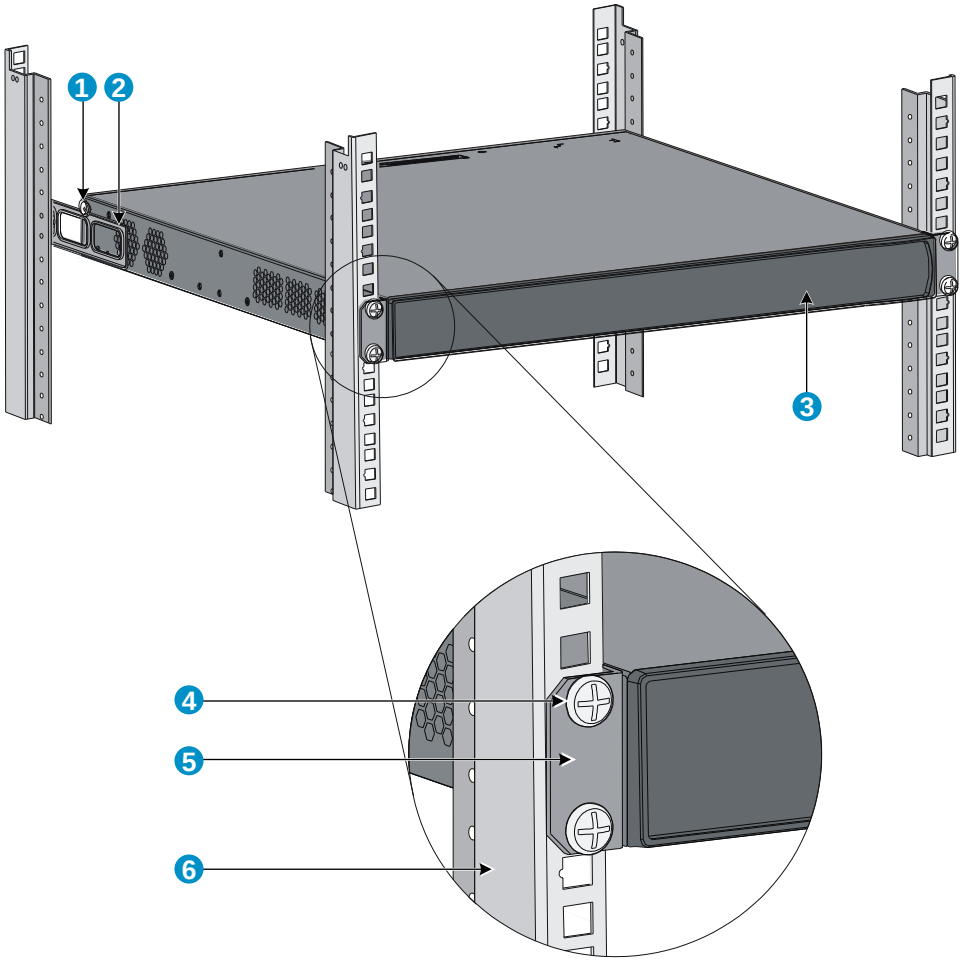
Figure 8 Mount the switch in the rack



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

9. The other person attaches the front brackets to the rack, as shown in Figure 9:
   a. Align the oval holes in the front brackets with the mounting holes in the front rack posts.
   b. Fasten the front mounting brackets to the front rack posts with user-supplied M6 screws.
10. Verify that front and rear mounting brackets have been installed correctly and switch is securely mounted in the rack.

Figure 9 Attach the front brackets to the rack

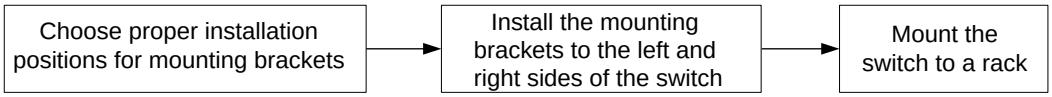


(1) Load-bearing screw	(2) Rear mounting bracket
(3) Front panel	(4) A screw used to fasten the front mounting bracket to the rack
(5) Front mounting bracket	(6) Front square-holed post

Rack-mounting the A5120 SI switch in a 19-inch rack

Figure 10 shows the general procedure for installing an A5120 SI switch in a 19-inch rack.

Figure 10 Install an A5120 SI switch in a 19-inch rack

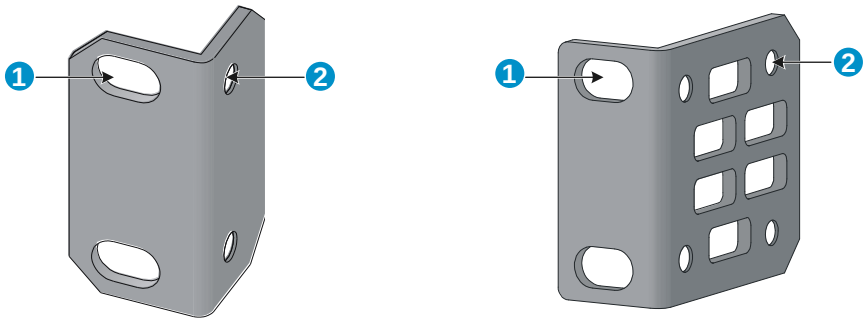


Mounting brackets and mounting positions

Table 8 Mounting brackets for the A5120 SI switches

Chassis	Bracket view	Mounting position
• A5120-16G SI • A5120-24G SI	See callout A in Figure 11.	• Front mounting (see Figure 12) • Rear mounting (see Figure 13)
• A5120-24G-PoE+ SI • A5120-24G-PPoE+ SI	See callout B in Figure 11.	• Front mounting (see Figure 14) • Mid-mounting (see Figure 15) • Rear mounting (see Figure 16)
A5120-48G SI	See callout B in Figure 11.	• Front mounting (see Figure 14) • Rear mounting (see Figure 16)

Figure 11 Mounting brackets



(A) (B)

(1) Holes for attaching to a rack (by using M6 screws)

(2) Holes for attaching to the switch chassis

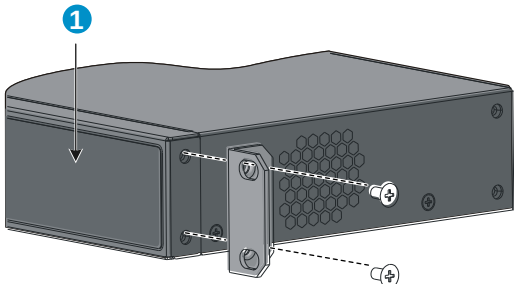
Attaching the mounting brackets to the switch chassis

To attach the mounting brackets to the switch chassis:

1. Identify the correct mounting position (see Table 8).
2. Align the round holes in one bracket with the holes in the mounting position.
3. Use screws to fasten the mounting bracket to the chassis.

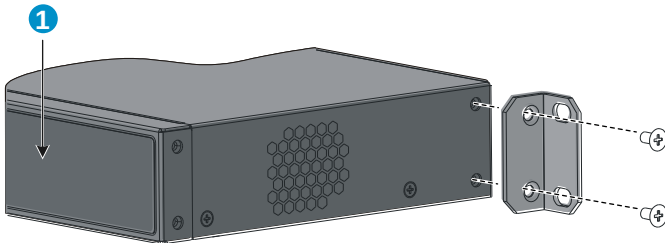
4. Repeat the preceding steps to attach the other mounting bracket to the chassis.

Figure 12 Front mounting position (A5120-16G SI/A5120-24G SI)



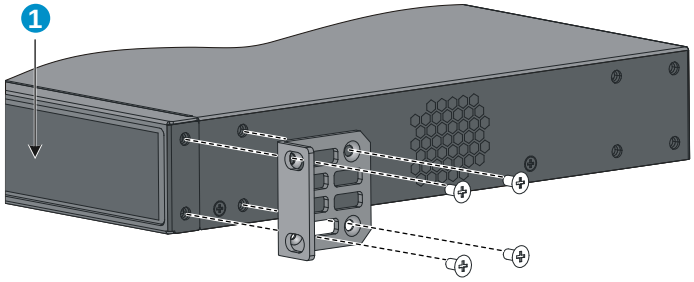
(1) Front panel

Figure 13 Rear mounting position (A5120-16G SI/A5120-24G SI)



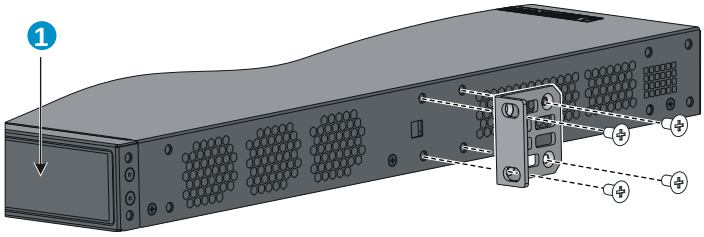
(1) Front panel

Figure 14 Front mounting position (A5120-24G-PoE+ SI/A5120-24G-PPoE+ SI/A5120-48G SI)



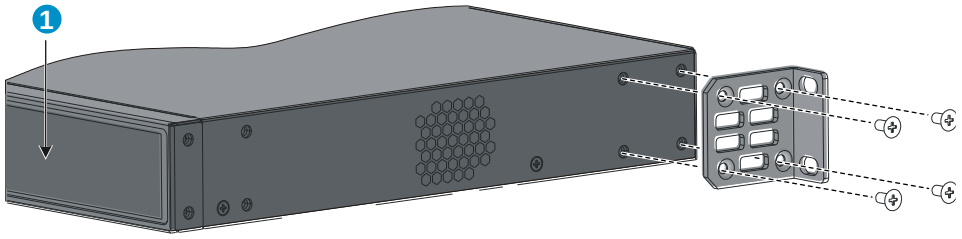
(1) Front panel

Figure 15 Mid-mounting position (A5120-24G-PoE+ SI/A5120-24G-PPoE+ SI)



(1) Front panel

Figure 16 Rear mounting position (A5120-24G-PoE+ SI/A5120-24G-PPoE+ SI/A5120-48G SI)



(1) Front panel

Rack-mounting procedure

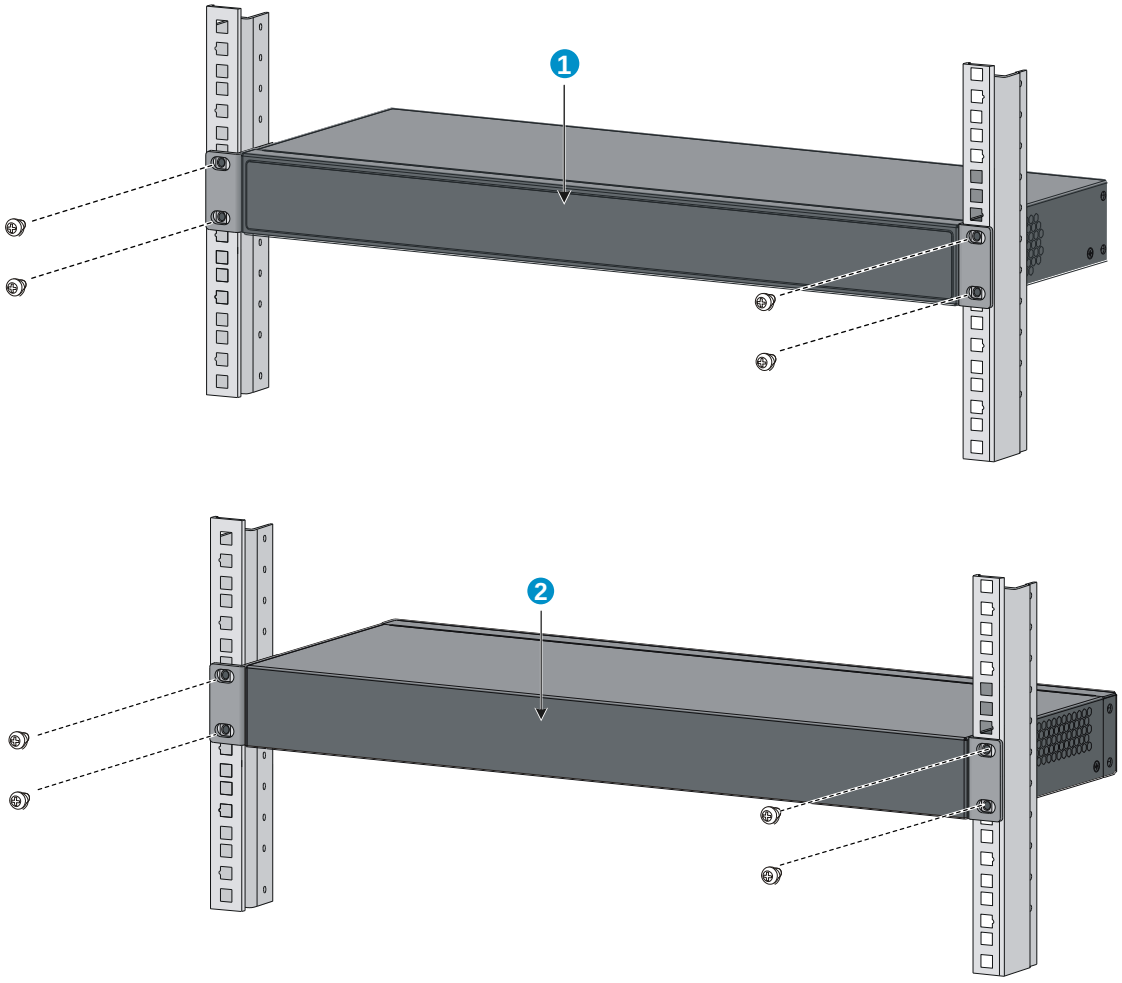
This task requires two persons. To mount the switch in a rack:

1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.
2. Check that the rack is properly grounded and can support the weight of the switch chassis and all its accessories.
3. Check that the mounting brackets have been securely attached to the switch chassis.
4. Install cage nuts (user-supplied) in the mounting holes in the rack posts.
5. 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 fastens the mounting brackets with M6 screws (user-supplied) to the rack, as shown in Figure 17 or Figure 18.

NOTE:

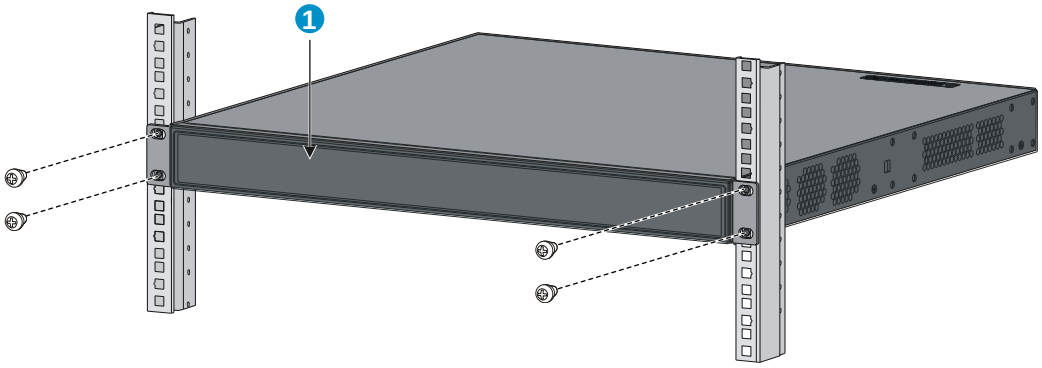
If a rack shelf is available, you can put the switch on the rack shelf, slide the switch to an appropriate location, and attach the switch to the rack with the mounting brackets.

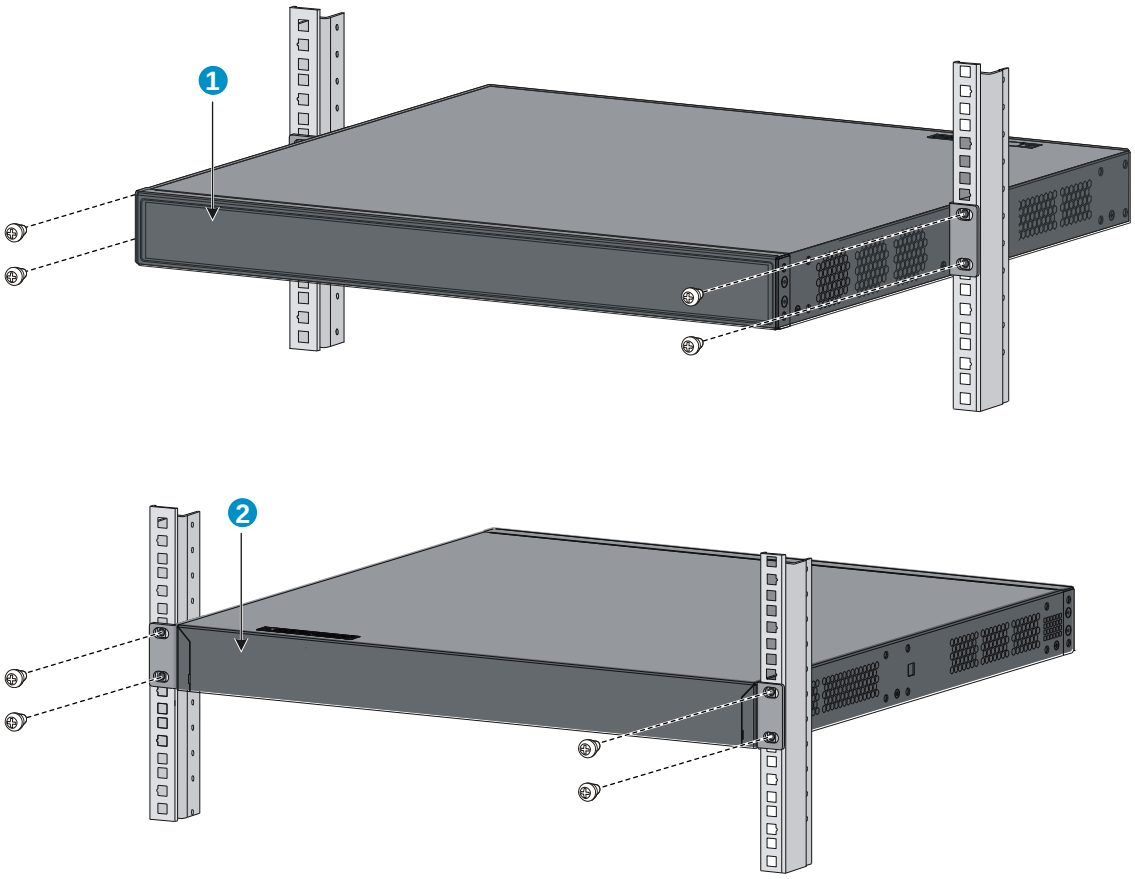
Figure 17 Mount the switch in a rack (A5120-16G SI)



(1) Front panel	(2) Rear panel

Figure 18 Mount the switch in a rack (A5120-24G-PoE+ SI/A5120-24G-PPoE+ SI)





(1) Front panel	(2) Rear panel

Mounting the switch on a workbench

This installation method is available for all A5120 EI and A5120 SI switches.

To mount the switch on a workbench:

1. Check that the workbench is sturdy and properly grounded.
2. Place the switch upside-down on the workbench.
3. Clean the round holes in the chassis bottom with dry cloth.
4. Attach the rubber feet to the four round holes in the chassis bottom.
5. Place the switch upright on the workbench.

IMPORTANT:

Ensure good ventilation and 10 cm (3.9 in) of clearance around the chassis for heat dissipation.

Do not place heavy objects on the switch.

Grounding the switch

⚠ WARNING!

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

NOTE:

The power and grounding terminals shown in this section are for illustration only, and may be different from the switch's actual power and grounding terminals.

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 to a grounding strip
- Grounding to a buried grounding conductor
- Grounding through the AC power cord

HP recommends grounding the switch to a grounding strip in the equipment room, using the grounding cable provided with the switch, whenever possible.

Grounding to a grounding strip

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

⚠ WARNING!

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

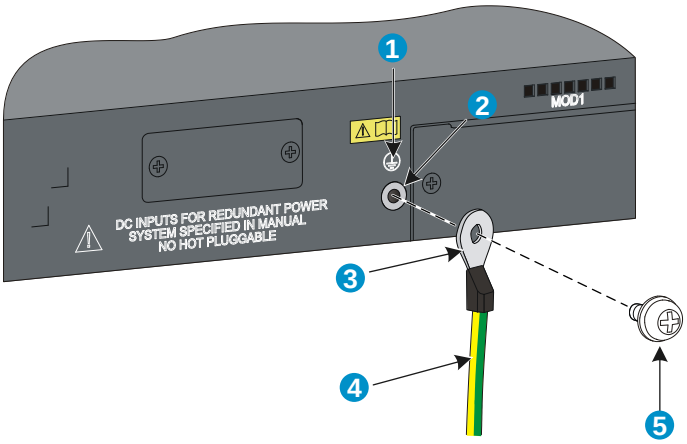
NOTE:

An OT terminal is supplied with the A5120 EI series A5120-24G-PoE+ SI and A5120-24G-PPoE+ SI switches. For other models, the OT terminal is user-supplied.

To connect the grounding cable to the switch (the A5120-48G EI (2 slots) is shown as an example):

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. Thread the grounding screw through the grounding cable's OT terminal, as shown in Figure 19.
3. Use a screwdriver to fasten the grounding screw into the grounding screw hole.

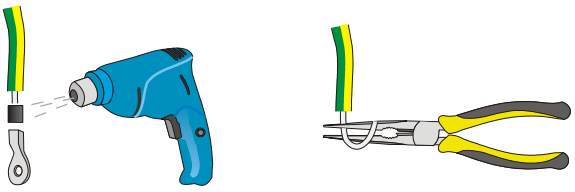
Figure 19 Connecting the grounding cable to the grounding hole of the switch chassis



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

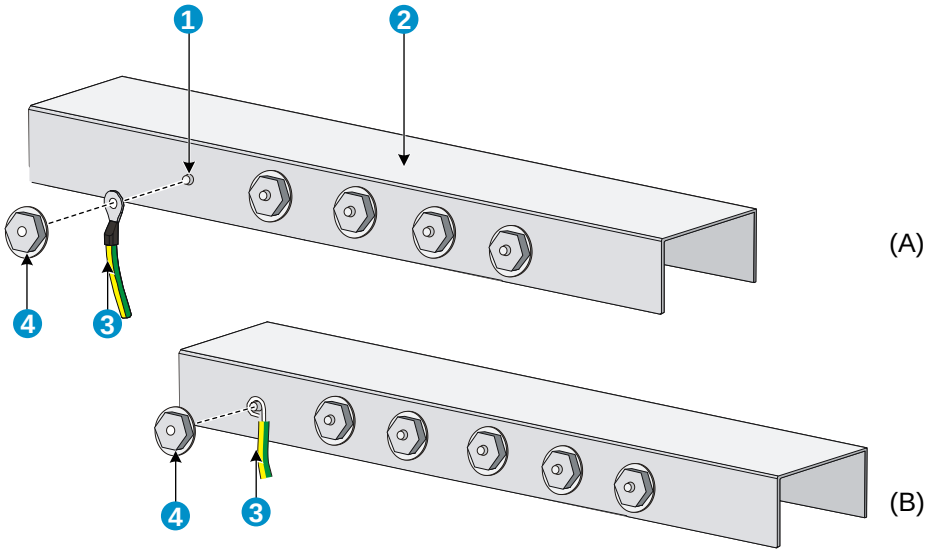
4. Remove the hex nut of a grounding post on the grounding strip.
5. Cut the grounding cable as appropriate for connecting to the grounding strip.
6. Make the connector for connecting to the grounding strip:
   - If an OT terminal is available, peel 5 mm (0.20 in) of insulation sheath by using a wire stripper, and insert the bare metal part through the black insulation covering into the end of the OT terminal, secure the metal part of the cable to the OT 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 (see callout A in Figure 20).
   - If no OT terminal is available, peel the insulation sheath as appropriate using a wire stripper, and bend the bare metal part into a ring (see callout B in Figure 20). Attach the OT terminal or the ring to the grounding strip through the grounding post, and fasten it with the removed hex nut, as shown in Figure 21.

Figure 20 Making a grounding cable connector



(A) (B)

Figure 21 Connecting the grounding cable to a grounding strip



(1) Grounding post	(2) Grounding strip
(3) Grounding cable	(4) Hex nut

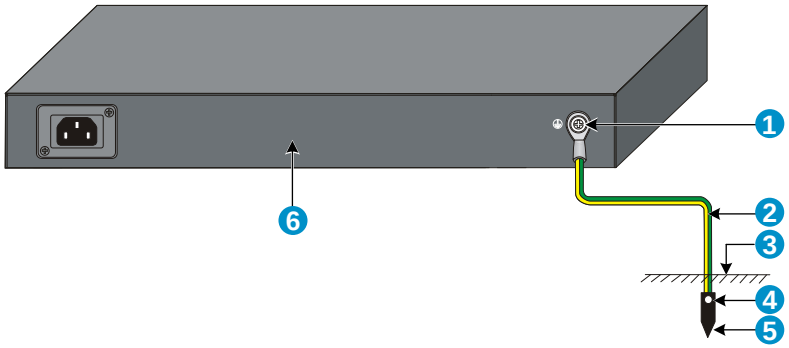
Grounding to a buried grounding conductor

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, as shown in Figure 22.

The dimensions of the angle iron must be at least 50 × 50 × 5 mm (1.97 × 1.97 × 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.

Figure 22 Ground the switch by burying the grounding conductor into the earth ground



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

Grounding through the AC power cord

If the installation site has no grounding strips or earth ground, you can ground an AC-powered switch through the PE wire of the power cord, as shown in Figure 23.

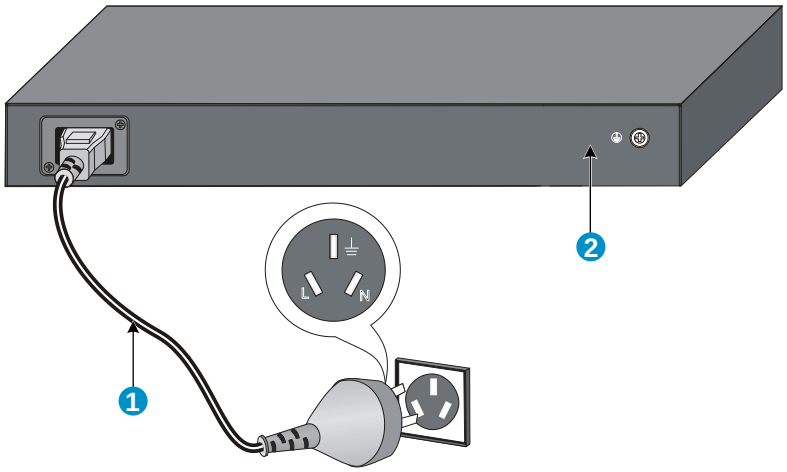
You must make sure:

- 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 properly grounded, report the problem and reconstruct the grounding system.

Figure 23 Grounding through the PE wire of the AC power cord



(1) Three-wire AC power cable	(2) Chassis rear panel

Connecting the power cord

⚠ WARNING!

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

Use Table 9 to identify the power cord connection procedures for your switch.

Table 9 Power cord connection methods at a glance

Chassis	Connection procedure
A5120-16G SI A5120-24G SI A5120-48G SI A5120-24G-PPoE+ SI	Connecting the AC power cord
A5120-24G-PoE+ SI	AC-input: Connecting the AC power cord RPS input: Connecting the switch to a –52 to –55 VDC output RPS
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots) A5120-24G EI A5120-48G EI	AC-input: Connecting the AC power cord RPS input: Connecting the switch to a +12 VDC output RPS
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	AC-input: Connecting the AC power cord RPS input: Connecting the switch to a –52 to –55 VDC output RPS

Connecting the AC power cord

To connect the AC power cord:

1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.
2. Connect one end of the AC power cord to the AC-input power receptacle on the switch. For examples, see Figure 24 (A5120-48G EI) and Figure 25 (A5120-24G SI).
3. Connect the other end of the AC power cord to the AC power outlet.

Figure 24 Connect the AC power cord to the A5120-48G EI switch

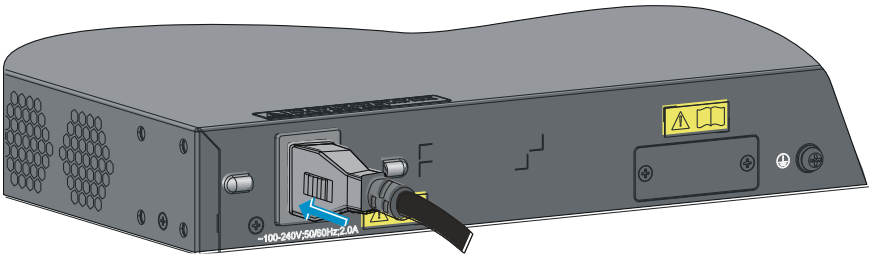
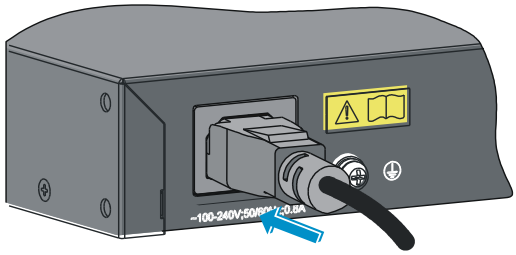


Figure 25 Connect the AC power cord to the A5120-24G SI switch



Connecting the switch to a +12 VDC output RPS

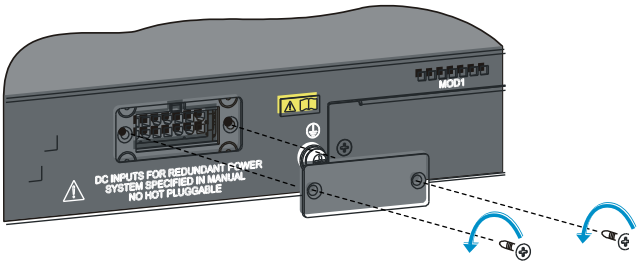
This section applies to the A5120-24G EI (2 slots), A5120-24G EI TAA (2 slots), A5120-48G EI (2 slots), A5120-48G EI TAA (2 slots), A5120-24G EI, and A5120-48G EI switches.

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 properly grounded.
2. To use the RPS receptacle, loosen the captive screws on the RPS receptacle protective cover and remove the protective cover, as shown in Figure 26.

   (If not using the RPS receptacle, leave the protective cover in place.)

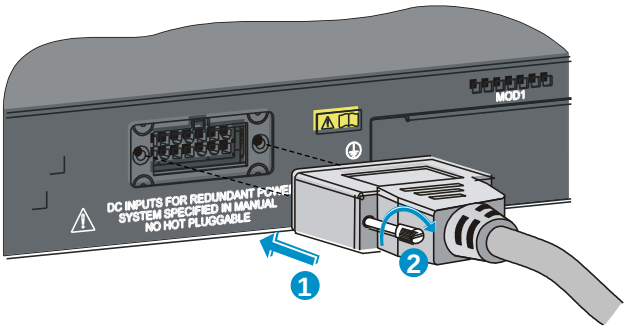
Figure 26 Remove the RPS receptacle protective cover



3. The RPS cable provided with the switch has a directional plug that fits the switch's RPS receptacle. Orient the plug to the RPS receptacle, and insert the plug as shown in Figure 27.

   Do not use excessive force. The RPS receptacle is directional. If you cannot insert the plug, re-orient the plug so it fits.
4. Tighten the screws on the plug with a flat-blade screwdriver.
5. Connect the other end of the power cord to the RPS.

Figure 27 Connect the RPS cable to the +12 VDC RPS receptacle



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

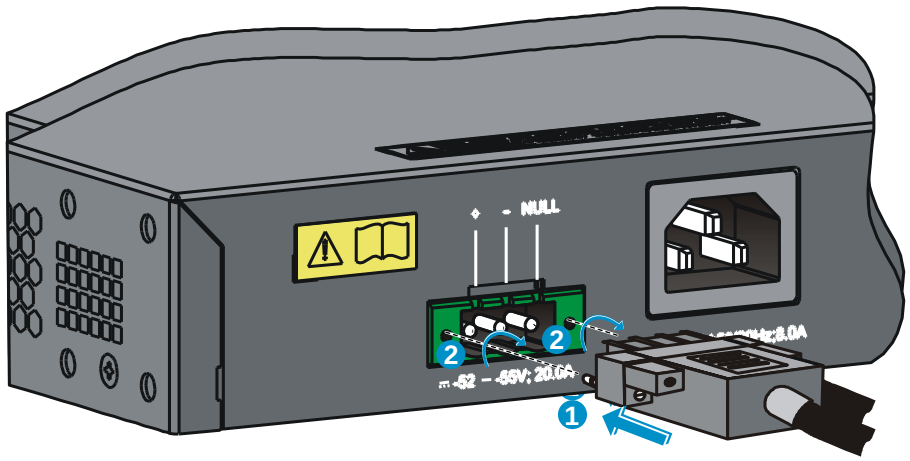
This section applies to the A5120-24G-PoE+ EI (2 slots), A5120-24G-PoE+ EI TAA (2 slots), A5120-48G-PoE+ EI (2 slots), A5120-48G-PoE+ EI TAA (2 slots) and A5120-24G-PoE+ SI switches.

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

1. The RPS cable provided with the switch has a directional plug that fits the switch's RPS receptacle. Orient the plug to the RPS receptacle, and insert the plug as shown in Figure 28.

   Do not use excessive force. The RPS receptacle is directional. If you cannot insert the plug, re-orient the plug so it fits.
2. Tighten the screws on the plug with a flat-blade screwdriver.
3. Connect the other end of the power cord to the RPS.
4. Verify that the RPS is supplying power and that the RPS status LED is ON.

Figure 28 Connect the RPS cable to the –52 to –55 RPS receptacle



Installing/removing an interface card (A5120 EI switches only)

IMPORTANT:

To set up an A5120 EI IRF fabric, you must install interface cards. To choose a correct slot for an interface card, see "Planning the cabling scheme for an A5120 EI IRF fabric."

This section applies to all A5120 EI switches except the A5120-24G EI and A5120-48G EI.

This section describes the procedures for installing and removing an interface card, using the LSPM2SP2P interface card as an example.

For the interface cards available for the switches, see "Interface cards (A5120 EI switches only)."

When installing and removing interface cards:

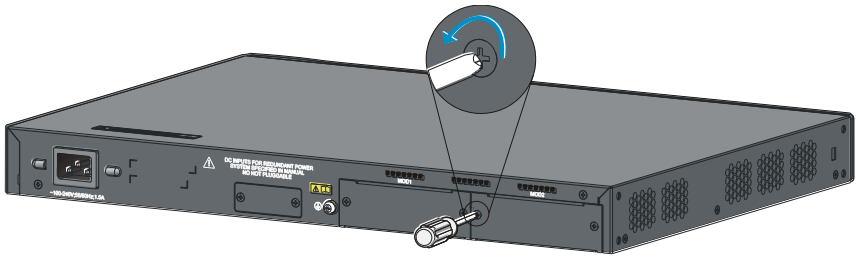
- Do not use excessive force.
- Wear an ESD wrist strap.
- Do not touch surface-mounted components.

Installing an interface card

To install an interface card in an interface card slot at the rear of the chassis:

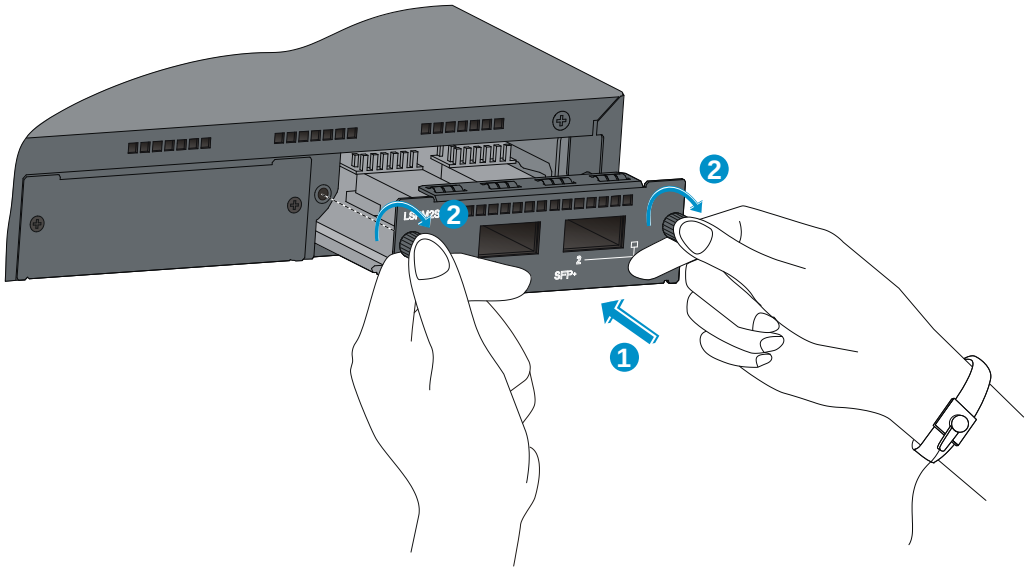
1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.
2. Use a Phillips screwdriver to release the mounting screws on the filler panel over the interface card slot, and remove the filler panel.

Figure 29 Remove the filler panel over an interface card slot



3. Holding the captive screws on the front panel of the interface card, gently push the interface card in along the slot guide rail until the interface card is firmly seated, as shown in Figure 30).
4. Tighten the captive screws with a Phillips screwdriver, without using excessive force. (The torque on the captive screws must not exceed 0.4 N-m.)

Figure 30 Install an interface card (II)



Removing an interface card

To remove an interface card:

1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.
2. Use a Phillips screwdriver to completely loosen the captive screws at both sides of the interface card.
3. Pull the interface card out along the guide rails and remove it.
4. If no new card is to be installed, install the filler panel to prevent dust buildup and ensure good ventilation inside the switch.

Installing/removing a dedicated CX4/SFP+ cable

The dedicated CX4 and SFP+ cables for the A5120 EI switches are hot swappable.

Installing a dedicated CX4/SFP+ cable

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 properly 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

To remove a CX4 or SFP+ cable from a port on a CX4/SFP+ interface card:

1. Wear an ESD-preventive wrist strap and make sure it makes good skin contact and is properly grounded.

2. Hold the cable connector and pull the pull latch of the connector to remove the cable from the switch.

Verifying the installation

Before powering on the switch, verify that:

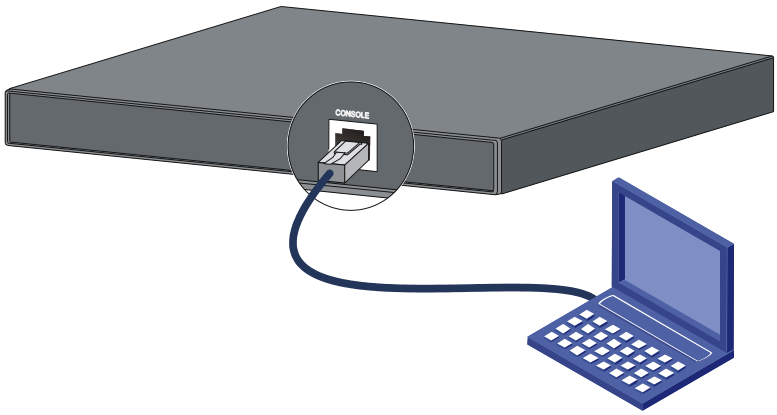
- There is enough space around the switch for heat dissipation.
- The switch is mounted securely on a sturdy workbench or rack.
- The switch is grounded properly, and the grounding cable is connected securely.
- The correct power source is used.
- The power cords are properly connected.
- All the interface cabling is indoors. If any cable is routed outdoors, verify that the socket strip with lightning protection and lightning arresters for network ports is connected properly.

Accessing the switch for the first time

Setting up the configuration environment

To set up the configuration environment, connect a terminal (such as a PC) to the console port on the switch with a console cable.

Figure 31 Connect the console port to a terminal

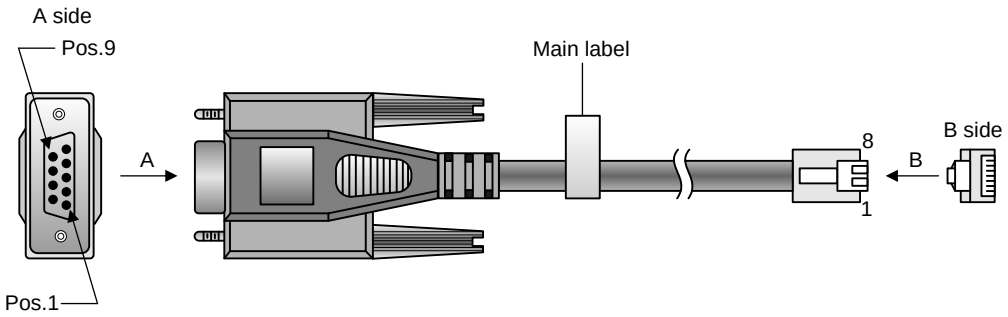


Connecting the console cable

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 32 Console cable



Connection procedure

CAUTION:

PC serial ports do not support hot-swapping. If the switch has been powered on, be sure to connect or disconnect the cable as follows:

- Connecting: First connect the cable to the PC; then connect the cable to the switch.
- Disconnecting: First disconnect the cable from the switch; then disconnect the cable from the PC.

To connect a PC or other terminal 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. Check for the mark on the console port to make sure you are connecting to the correct port.

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:

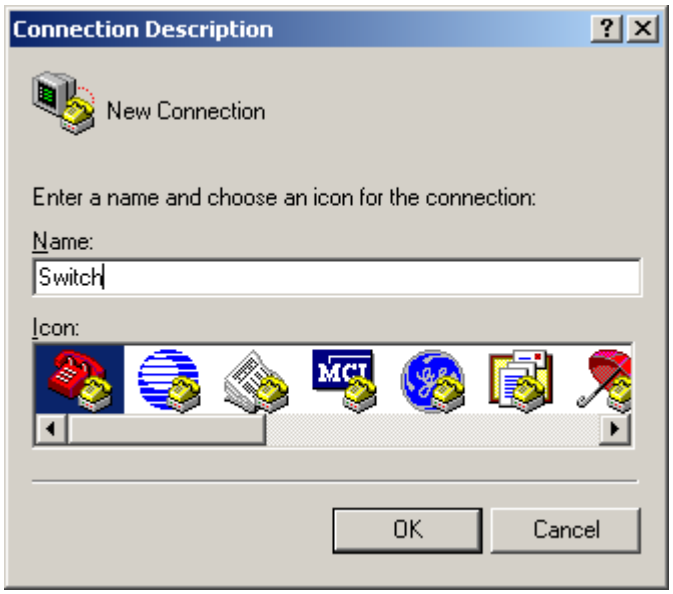
- **Bits per second**—9,600
- **Data bits**—8
- **Parity**—None
- **Stop bits**—1
- **Flow control**—None
- **Emulation**—VT100

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

1. Select **Start** > **All Programs** > **Accessories** > **Communications** > **HyperTerminal**.

   The **Connection Description** dialog box (Figure 33) appears.
2. Enter the name of the new connection in the **Name** field and click **OK**.

Figure 33 Connection description dialog box

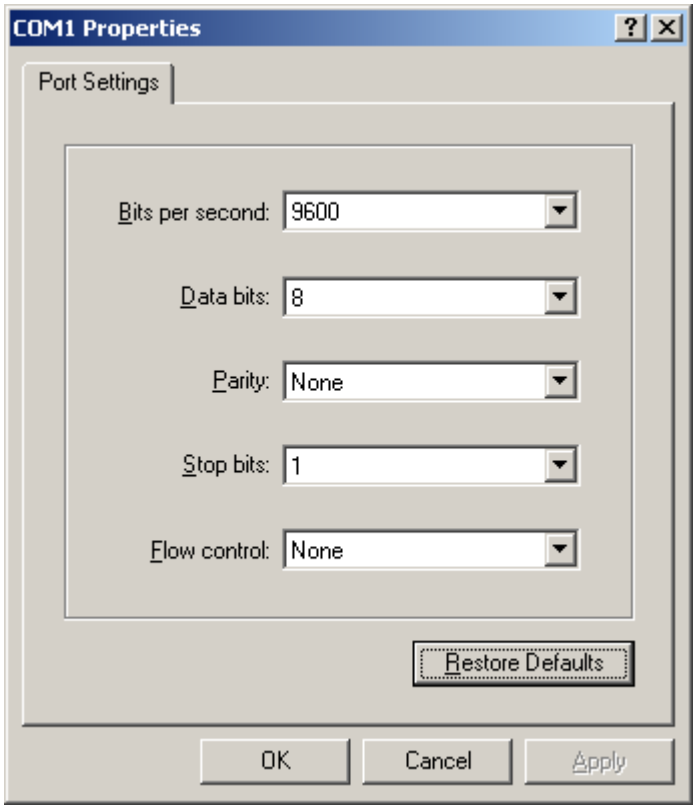


3. Select the serial port to be used from the **Connect using** list (Figure 34), and click **OK**.

Figure 34 Setting the serial port

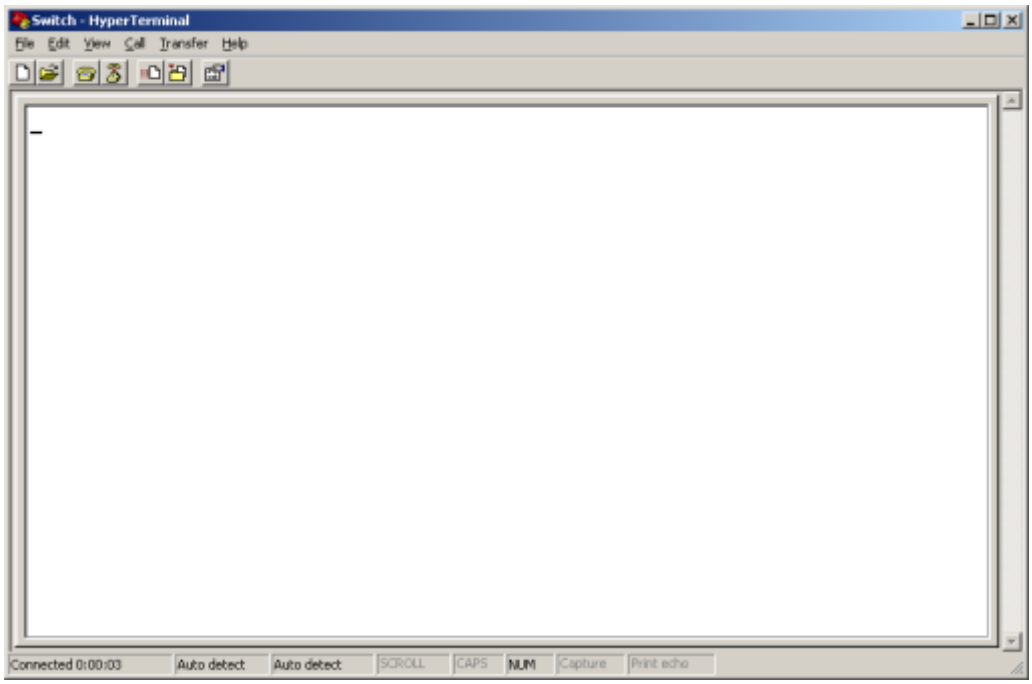
4. In the **Properties** dialog box (Figure 35), set **Bits per second** to **9600**, **Data bits** to **8**, **Parity** to **None**, **Stop bits** to **1**, and **Flow control** to **None**, and click **OK**.

Figure 35 Setting the serial port parameters



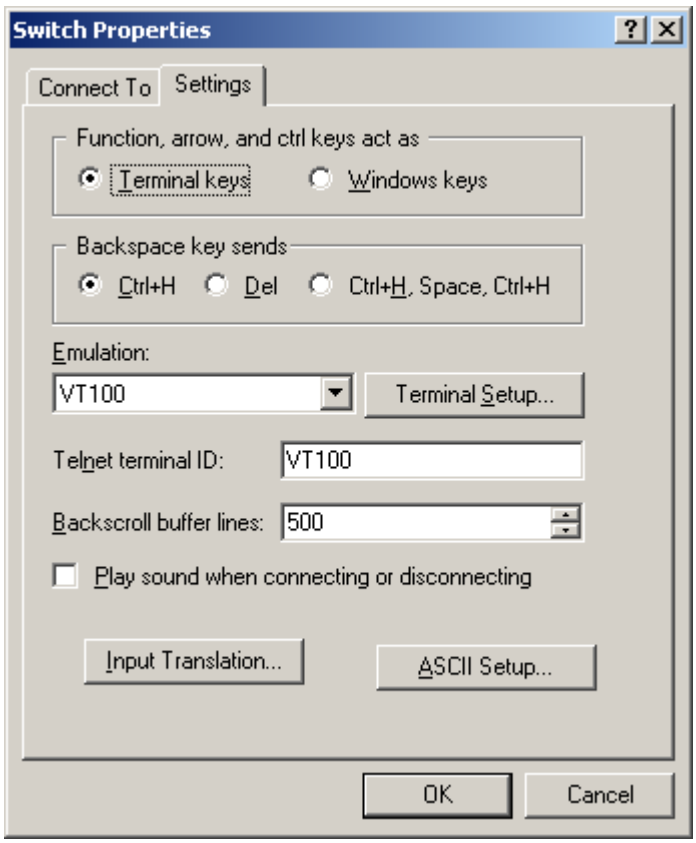
5. Select **File** > **Properties** in the HyperTerminal window (Figure 36).

Figure 36 HyperTerminal window



6. On the **Settings** tab (Figure 37), set the emulation to **VT100** and click **OK**.

Figure 37 Setting terminal emulation



Powering on the switch

Verification before power-on

Before powering on the switch, verify that:

- The power cord is properly connected.
- The input power voltage meets the requirement of the switch.
- The console cable is connected correctly.
- The console terminal is powered on and configured correctly.

Power-on sequence

The A5120-24G-PoE+ EI TAA (2 slots) switch is used in the following example.

The power-on sequence is as follows:

1. Power on the switch. The console terminal screen displays the following information:

```
Starting......

******************************************************************************
*                                                                            *
```

```
* HP A5120-24G-PoE+ EI TAA Switch with 2 Interface Slots BOOTROM, Version 205  *
*                                                                               *
*********************************************************************************
       Copyright (c) 2010-2011 Hewlett-Packard Development Company, L.P.
       Creation date    : Feb 23 2011, 09:36:58
       CPU Clock Speed  : 264MHz
       BUS Clock Speed  : 33MHz
       Memory Size      : 128MB
       Mac Address      : 3ce5a62f8dde



Press Ctrl-B to enter Boot Menu... 1
```

2. Press **Ctrl** + **B** at the prompt within one second to access the Boot menu, or wait for the system to automatically start up.

NOTE:

The system has two startup modes: full startup and fast startup. By default, the system starts up in fast mode and the waiting time is one second. In full startup mode, the waiting time is five seconds. To change the startup mode, see "Changing the startup mode."

3. If you press **Ctrl + B** within one second:
   a. the system displays a prompt for password:

```
Password:
```

   b. Press **Enter** at the prompt the first time you access the switch and you can see the following Boot menu:

```
      BOOT  MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify bootrom password
6. Enter bootrom upgrade menu
7. Skip current configuration file
8. Set bootrom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):
```

   The options in the Boot menu are described in Table 10:

Table 10 Boot menu options

Item	Description
1. Download application file to flash	Download a system software image file to the Flash memory.
2. Select application file to boot	Select the system software image file to boot.

Item	Description
3. Display all files in flash	Display all files in the Flash memory.
4. Delete file from flash	Delete files from the Flash memory.
5. Modify bootrom password	Modify the Boot ROM password.
6. Enter bootrom upgrade menu	Access the Boot ROM update menu.
7. Skip current configuration file	Start the switch with the factory default configuration. This is a one-time operation and does not take effect at the next reboot. You use this option when you forget the console login password.
8. Set bootrom password recovery	Disable or enable the Boot ROM password recovery function. By default, Boot ROM recovery is enabled. You can disable this function to protect system security.
9. Set switch startup mode	Set the startup mode to full mode or fast mode, as described in "Changing the startup mode."
0. Reboot	Restart the switch.

NOTE:

The system by default has no Boot ROM password. HP recommends that you set a Boot ROM password immediately after you access the Boot menu.

4. If you perform no operation or press any key other than **Ctrl + B** within one second:
   a. the system automatically starts up when the remaining time becomes zero, and displays the following information:

```
Auto-booting...
Decompress Image.....................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................................................................
.....................................OK!

User interface aux0 is available.



Press ENTER to get started.
```

b. Press **Enter** at the prompt, and you can configure the switch when the prompt <HP> appears.

Changing the startup mode

The system by default starts up in fast mode.

To change to the full startup mode:

1. Press **Ctrl + B** within one second to access the Boot menu:

```
          BOOT  MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify bootrom password
6. Enter bootrom upgrade menu
7. Skip current configuration file
8. Set bootrom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):
```

2. Enter **9** to change the startup mode.

```
The current mode is fast startup mode!
Are you sure you want to change it to full startup mode? Yes or No(Y/N)
```

3. Enter **Y** at the prompt.

```
Setting startup mode...done!

          BOOT  MENU

1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify bootrom password
6. Enter bootrom upgrade menu
7. Skip current configuration file
8. Set bootrom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):
```

4. Enter **0** at the prompt. The system reboots in full startup mode and displays the following information:

```
Starting......

******************************************************************************
*                                                                            *
```

```
* HP A5120-24G-PoE+ EI TAA Switch with 2 Interface Slots BOOTROM, Version 205  *
*                                                                              *
********************************************************************************
       Copyright (c) 2010-2011 Hewlett-Packard Development Company, L.P.
       Creation date   : Feb 23 2011, 09:36:58
       CPU Clock Speed : 264MHz
       BUS Clock Speed : 33MHz
       Memory Size     : 128MB
       Mac Address     : 3ce5a62f8dde


Press Ctrl-B to enter Boot Menu... 5
```

5. In full startup mode, you must press **Ctrl + B** within five seconds to access the Boot menu. If you perform no operation or press any key other than **Ctrl + B** within five seconds, the system automatically starts up and displays the following information:

```
Auto-booting...
Decompress Image................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
................................................................................
.............OK!
            Board checking.......................LSP1LTSUD
            SDRAM fast selftest........................OK!
            Flash fast selftest........................OK!
            CPLD selftest..............................OK!
            Switch chip selftest.......................OK!
            PHY selftest...............................OK!
            Please check leds....................FINISHED!
User interface aux0 is available.



Press ENTER to get started.
```

6. Press **Enter** at the prompt, and you can configure the switch when the prompt <HP> appears.

NOTE:

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

Setting up an IRF fabric

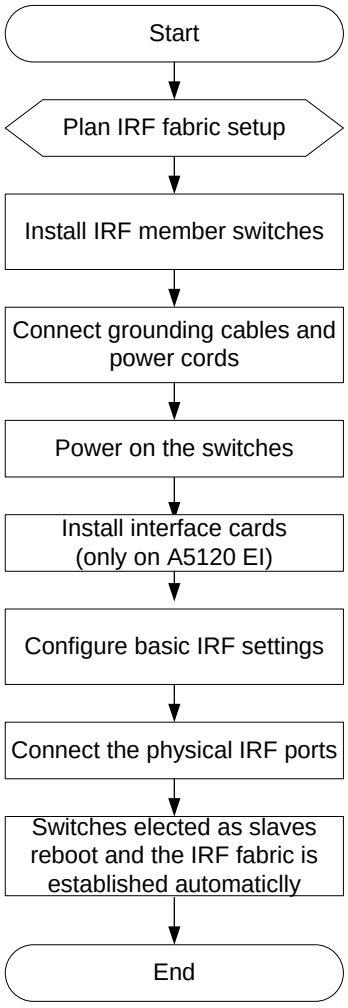
You can use HP Intelligent Resilient Framework (IRF) technology to connect and virtualize A5120 EI switches or A5120 SI switches into a virtual switch called an "IRF fabric" or "IRF virtual device," for flattened network topology and high availability, scalability, and manageability.

NOTE:

- IRF is not available on the A5120-24G EI or A5120-48G EI switch. The "A5120 EI switches" in this document does not include those two switch models.
- An IRF fabric cannot have both A5120 EI and A5120 SI switches.

IRF fabric setup flowchart

Figure 38 IRF fabric setup flowchart



To set up an IRF fabric:

Task	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."
3. Connect the grounding cable and power cords	See "Grounding the switch" and "Connecting the power cord."
4. Power on the switches	N/A
5. Install interface cards	This step is required only for the A5120 EI switches. See "Installing/removing an interface card (A5120 EI switches only)."
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, based on the user density and upstream bandwidth requirements. The switching capacity of an IRF fabric equals the total switching capacities of all member switches.

You can increase an IRF fabric's switching capacity by adding a switch without any topology change or replacement.

Identifying the master switch and planning IRF member IDs

NOTE:

IRF member switches 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 the IRF configuration guide for your switch.

Complete the following planning tasks:

- 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 use the command line interface of the master switch to configure and manage all member switches in the IRF fabric.

- 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

IRF topology

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.

IRF port connections

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.

The following figures show examples of IRF fabric topologies for the switch. The IRF port connections in these figures are for illustration only, and more connection methods are available.

A5120 EI daisy chain and ring topology examples are shown in Figure 39 and Figure 40.

Figure 39 A5120 EI IRF fabric in daisy chain topology

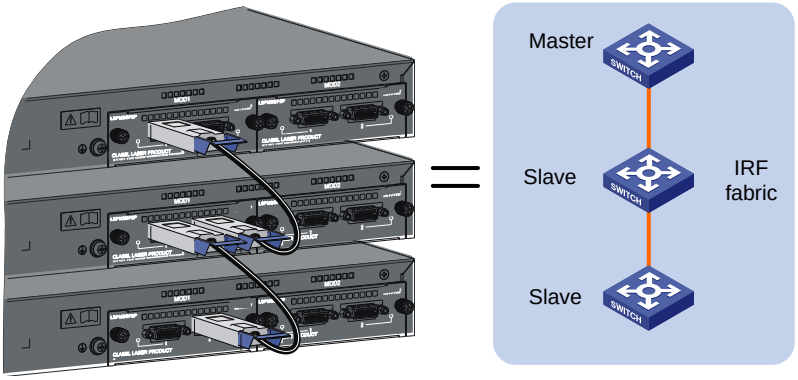
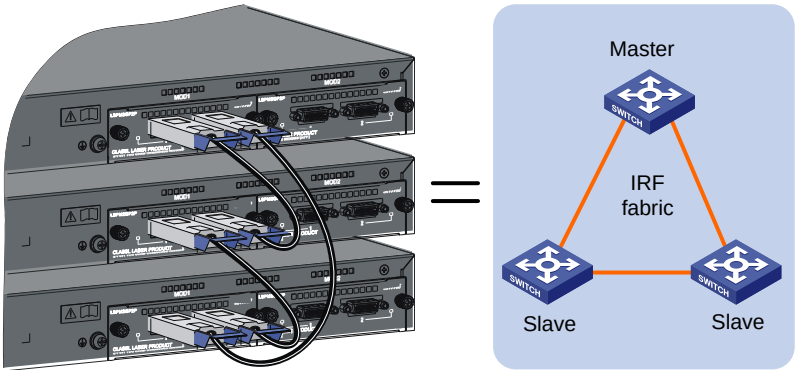


Figure 40 A5120 EI IRF fabric in ring topology



A5120-24G SI IRF fabric daisy chain and ring topology examples are shown in 0 and Figure 42.

Figure 41 A5120 SI IRF fabric in daisy chain topology

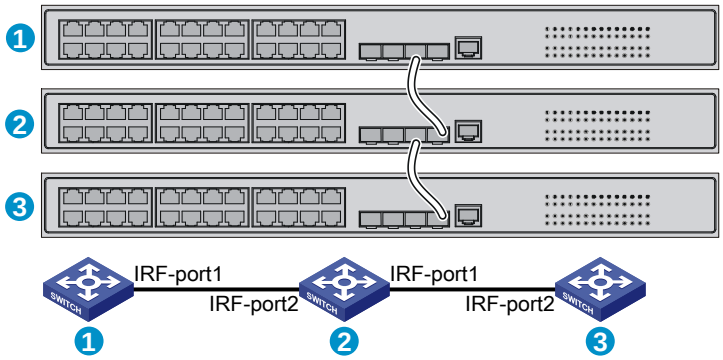
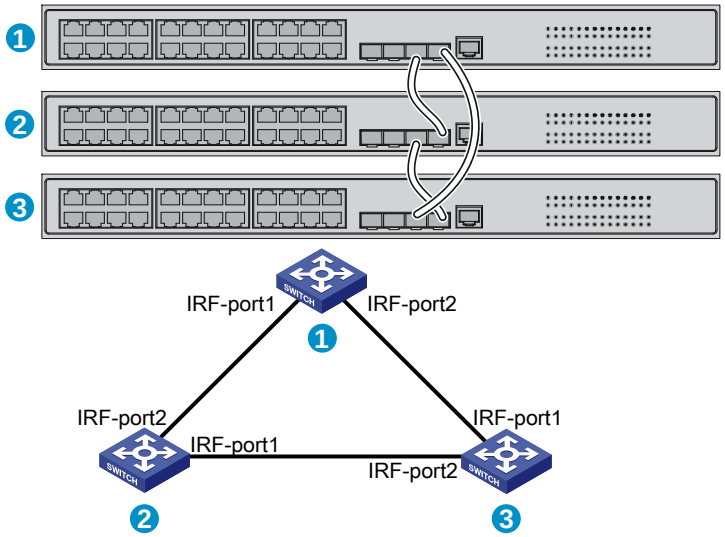


Figure 42 A5120 SI IRF fabric in ring topology



Identifying physical IRF ports on the member switches

Follow your topology and connection scheme in identifying the physical IRF ports on the member switches.

Table 11 shows the physical ports that can be used for IRF connection, and the restrictions on port use.

Table 11 Physical IRF port requirements

Switch chassis	Candidate physical IRF ports	Requirements
A5120 EI switches (excluding the A5120-24G EI and the A5120-48G EI)	Ports on the expansion interface cards on the rear panel	• You must order interface cards separately. For long-distance connections, use XFP or SFP+ transceiver modules and fibers. For short-distance connections, use CX4 or SFP+ cables. For more information, see "Interface cards (A5120 EI switches only)" and "SFP/SFP+/XFP transceiver modules and SFP+/CX4 cables (A5120 EI switches only)." • Ports assigned to the same IRF port must be on the same interface card. • All A5120 EI 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.
A5120 SI switches	All network ports	HP recommends that you use Gigabit SFP ports and HP A3600 Switch SFP Stacking Kit cables for IRF connection. For more information, see "SFP transceiver modules and SFP Stacking Kit (only for the A5120 SI switches)."

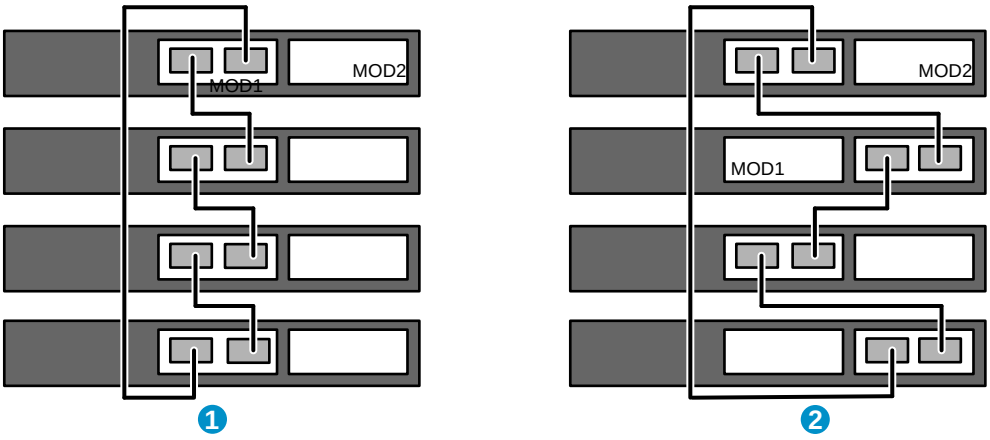
Planning the cabling scheme

Planning the cabling scheme for an A5120 EI IRF fabric

If 2-port interface cards are used and the IRF links are not aggregate, follow these guidelines on connecting two neighboring A5120 EI switches:

- 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 43.

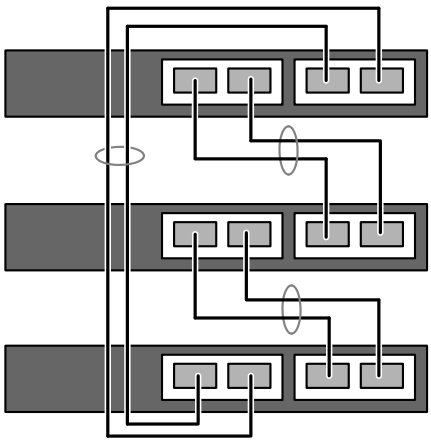
Figure 43 Use 2-port interface cards to set up single-link IRF connection



If 2-port interface cards are used and IRF links are aggregate, follow these guidelines on connecting two neighboring switches:

- The ports on the interface card MOD 1 on one switch must connect to the ports on 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 44. For example, you can connect the left port on one interface card to the left or right port on the other interface card.

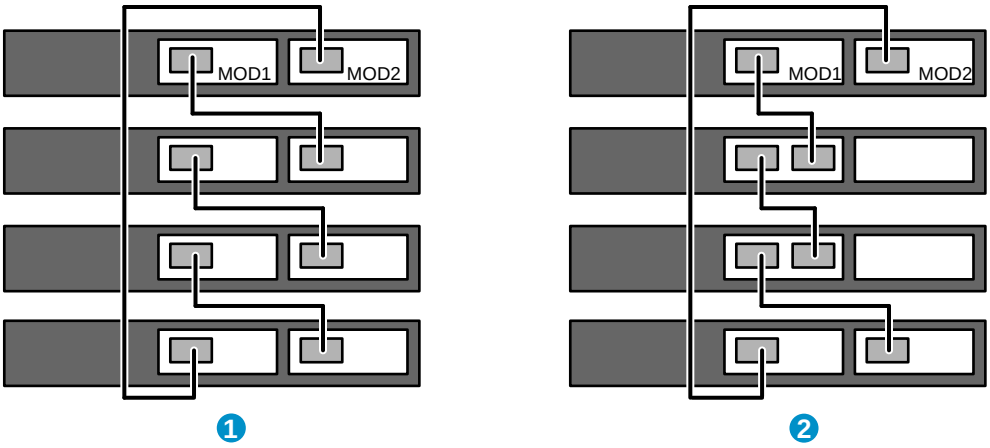
Figure 44 Use 2-port interface cards to set up multi-link IRF connection



If 1-port interface cards are used, follow these guidelines on connecting neighboring switches:

- If both of the 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 45).
- 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 45.)
  - 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 45 Cable connections for an IRF fabric with 1-port interface cards

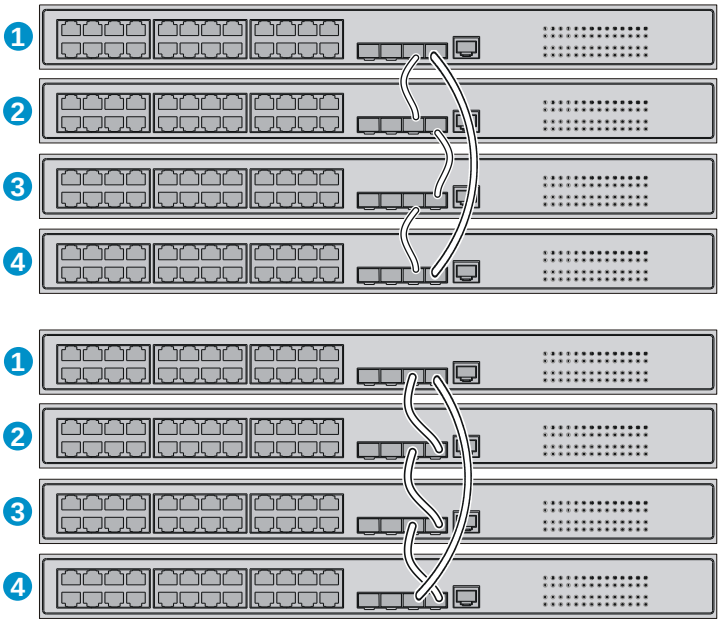


Planning the cabling scheme for an A5120 SI IRF fabric

HP recommends that you use Gigabit SFP ports and HP A3600 Switch SFP Stacking Kit cables for IRF connection.

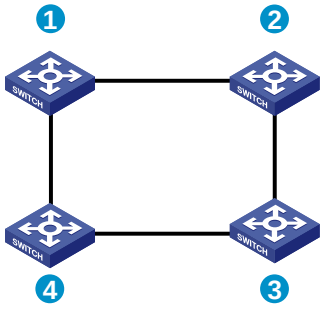
Figure 46 shows two IRF connection schemes, and uses Gigabit SFP ports and HP A3600 Switch SFP Stacking Kit cables for IRF connection. These schemes use a ring topology.

Figure 46 Connect the IRF member switches



0 shows the IRF fabric topology.

Figure 47 IRF fabric topology



Configuring basic IRF settings

After installing the IRF member switches, power on the switches and log in to each IRF member switch to configure their member IDs, member priorities, and IRF port bindings. For more information, see the fundamentals configuration guide for your switch.

Follow these guidelines when you configure the neighboring 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.
- To activate the IRF port configuration, execute the **irf-port-configuration active** command.
- To verify the basic IRF settings, execute the **display irf configuration** command.

For more information about configuring basic IRF settings, see the IRF configuration guide for your switch.

Connecting the physical IRF ports

Follow your plan in connecting the IRF member switches. Wear an ESD-preventive wrist strap when you connect the physical IRF ports. For more information about connecting physical IRF ports, see *Pluggable SFP/SFP+/XFP Transceiver Modules Installation Guide*.

Accessing the IRF fabric to verify the configuration

To verify the basic functionality of the IRF fabric after you finish configuring basic IRF settings and connecting IRF ports:

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 that the IRF fabric and the remote network management station can reach each other.
3. Use Telnet, web or SNMP to access the IRF fabric from the network management station.

   For more information, see the fundamentals configuration guide for your switch.
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 Table 12.

Table 12 Displaying and maintaining IRF configuration and running status

To do …	Use the 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 MAD mechanism to detect the presence of multiple identical IRF fabrics and handle collisions. For more information about MAD detection, see the IRF configuration guide for your switch.

Maintenance and troubleshooting

Password loss

Console login password loss

To recover a lost console login password:

1. Access the Boot menu. The console terminal screen displays the following:

```
      BOOT  MENU
1. Download application file to flash
2. Select application file to boot
3. Display all files in flash
4. Delete file from flash
5. Modify bootrom password
6. Enter bootrom upgrade menu
7. Skip current configuration file
8. Set bootrom password recovery
9. Set switch startup mode
0. Reboot

Enter your choice(0-9):
```

2. Enter **7** and restart the switch. The switch reboots, bypassing the configuration.
3. Log in through the console port without entering the password, and check the configuration file for the user password.

Boot ROM password loss

Contact the HP Support for help.

Power supply failure

The switch's power supplies are as follows:

- The A5120 EI switches and the A5120 SI switches use fastened power supplies.
- All A5120 EI switches and the A5120-24G-PoE+ SI switch support three power input modes:
  - AC input
  - RPS DC input
  - Concurrent AC and RPS DC inputs
- All other A5120 SI switches use only one AC power input

To identify the cause of a power failure:

- On any A5120 EI switch, look at the system status LED and the RPS status LED of the switch. For more information, see "LEDs (for the A5120 EI switches)".

- On the A5120-24G-PoE+ SI switch, look at the power LED and the RPS status LED of the switch. For more information, see "LEDs (for the A5120 SI switches)."
- On any other A5120 SI switch, look at the power LED of the switch. For more information, see "LEDs (for the A5120 SI switches)."

NOTE:

In the following subsections, **the system status LED** refers collectively to both the system status LED on an A5120 EI switch and the power LED on an A5120 SI switch.

AC input

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

- 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 working correctly.
- The operating temperature of the switch is in the normal range, and the power module has good ventilation. Over-heating 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. Check the following:

- The switch is securely connected to the RPS.
- The RPS is working correctly.
- The operating temperature of the switch is in the normal range, and the power supply has good ventilation. Overheating 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.

   Check the following:

   - 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 working correctly.
   - The switch is securely connected to the RPS.
   - The RPS is working correctly.
   - The operating temperature of the switch is in the normal range, and the power supply has good ventilation. Overheating can cause the power supply to stop working and enter the protection state.
2. If the system status LED is on but the RPS status LED is steady yellow, an AC input failure has occurred.

   Check the following:

   - 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 working correctly.
3. If the system status LED is on but the RPS status LED is off, an RPS input failure has occurred.

   Check the following:

- The switch is securely connected to the RPS.
- The RPS is working correctly.

NOTE:

If the problem persists, contact HP Support for help.

Fan failure (A5120 EI switches only)

You can check the system status LED and the seven-segment LED of an A5120 EI switch to identify a fan failure. If both LEDs are behaving as described in Table 13, a fan failure has occurred.

Table 13 LED behaviors that identify a fan failure

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

The A5120 EI switches use fans that are not user-replaceable. If a fan failure occurs, contact HP Support for help and do not attempt to fix the problem yourself.

Console terminal problems

If the console terminal setup is correct, the console terminal displays boot information when the switch is powered on. If the setup is incorrect, the console terminal displays nothing or garbled text.

No terminal display

If the console terminal displays nothing after the switch is powered on, check the following:

- The power supply is supplying power to the switch.
- The console cable is connected properly.
- The terminal settings are correct.
- The console cable is good.

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

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 http://www.hp.com
- HP Networking http://www.hp.com/go/networking
- HP manuals http://www.hp.com/support/manuals
- HP download drivers and software http://www.hp.com/support/downloads
- HP software depot http://www.software.hp.com

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
WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
CAUTION	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.
IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 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.

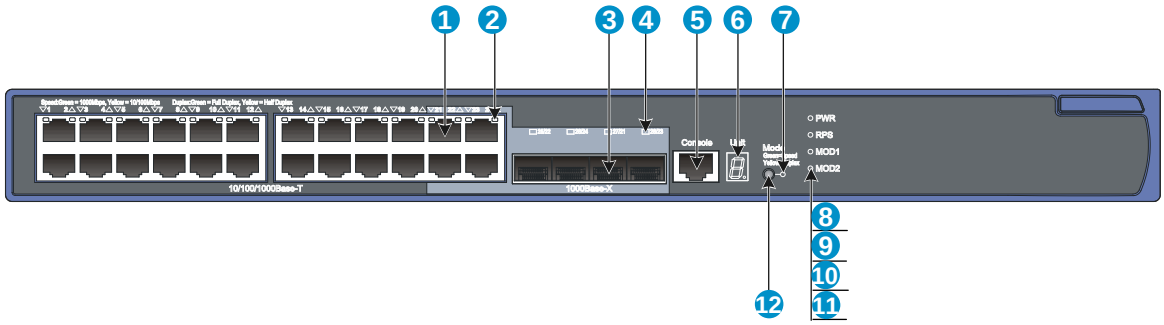
Appendix A Technical specifications

Panel views

A5120-24G EI (2 slots)/A5120-24G EI TAA (2 slots)

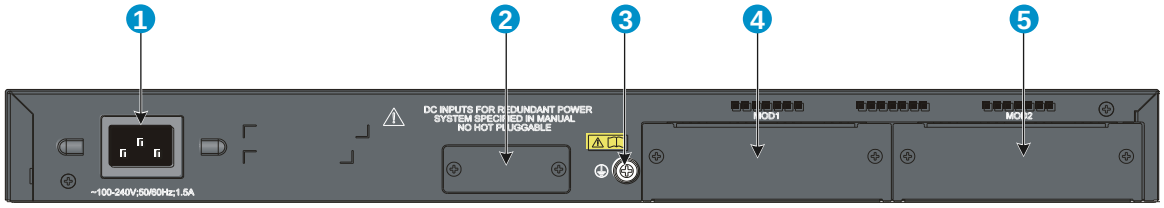
The A5120-24G EI (2 slots) and A5120-24G EI TAA (2 slots) switches come with the expansion interface card slots covered by filler panels.

Figure 48 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

Figure 49 Rear panel

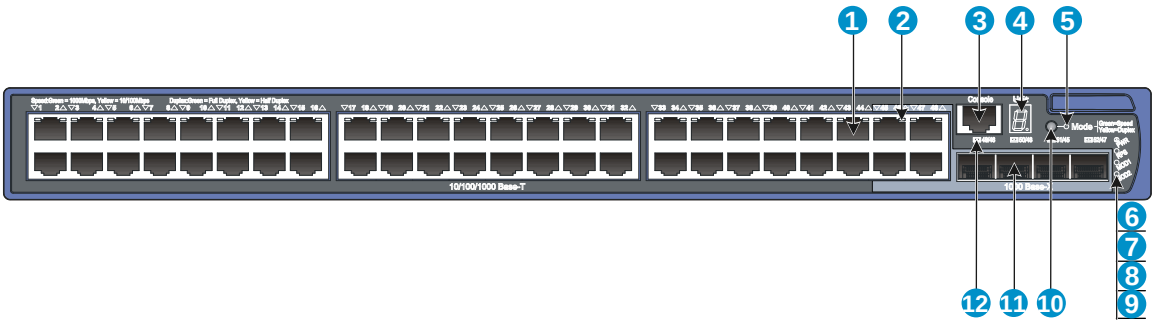


(1) AC-input power receptacle	(2) RPS receptacle (shipped with a protective cover)
(3) Grounding screw	(4) Interface card slot 1 (MOD1)
(5) Interface card slot 2 (MOD2)	

A5120-48G EI (2 slots)/A5120-48G EI TAA (2 slots)

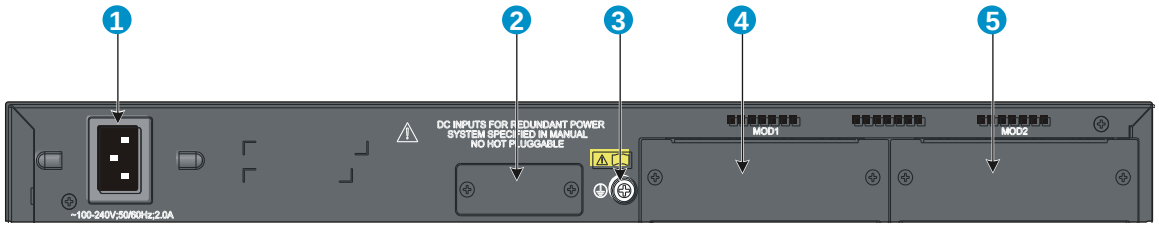
The A5120-48G EI (2 slots) and A5120-48G EI TAA (2 slots) switches come with the expansion interface card slots covered by filler panels.

Figure 50 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 51 Rear panel



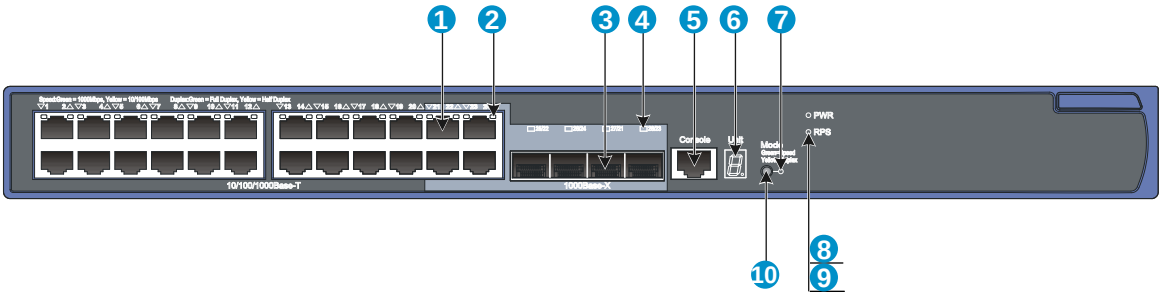
(1) AC-input power receptacle	(2) RPS receptacle (shipped with a protective cover)
(3) Grounding screw	(4) Interface card slot 1 (MOD1)
(5) Interface card slot 2 (MOD2)	

A5120-24G EI

CAUTION:

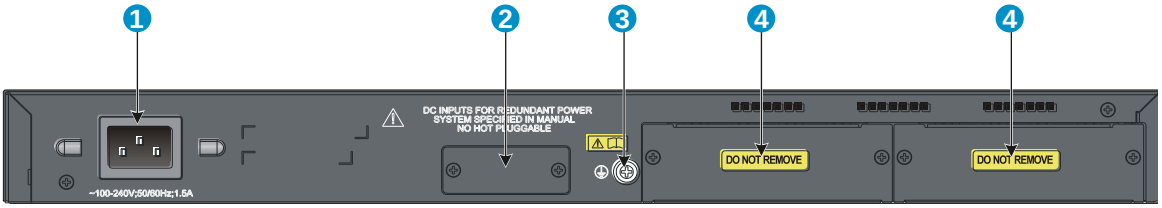
The A5120-24G EI switch does not support interface cards. To ensure good ventilation, do not remove the interface card slot filler panels.

Figure 52 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 10/100/1000Base-T Ethernet port LED
(3) SFP port	(4) 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) Port LED mode switching button

Figure 53 Rear panel



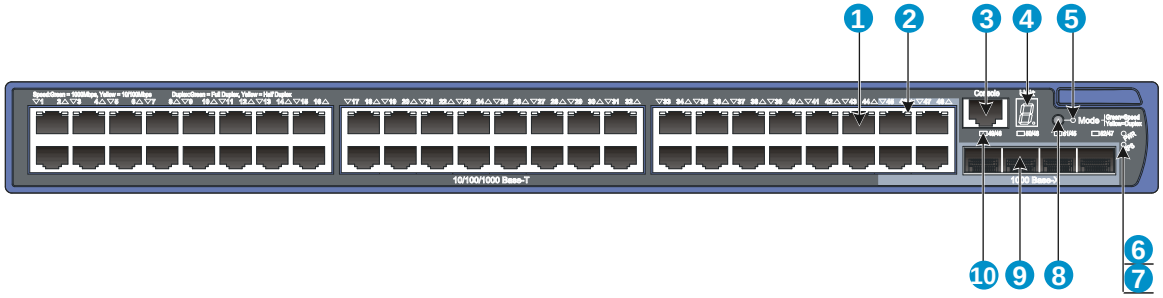
(1) AC-input power receptacle	(2) RPS receptacle
(3) Grounding screw	(4) "DO NOT REMOVE" label

A5120-48G EI

CAUTION:

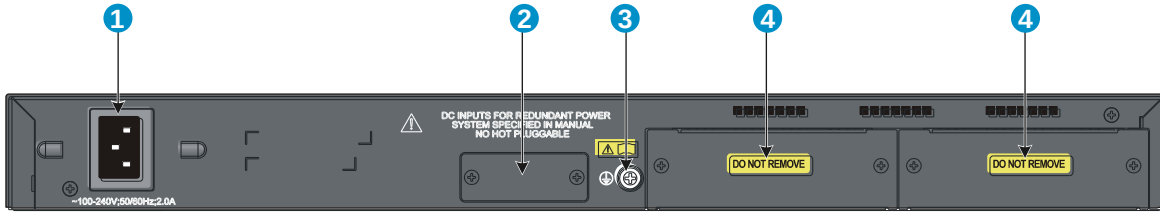
The A5120-48G EI switch does not support interface cards. To ensure good ventilation, do not remove the interface card slot filler panels.

Figure 54 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) Port LED mode switching button
(9) SFP port	(10) SFP port LED

Figure 55 Rear panel

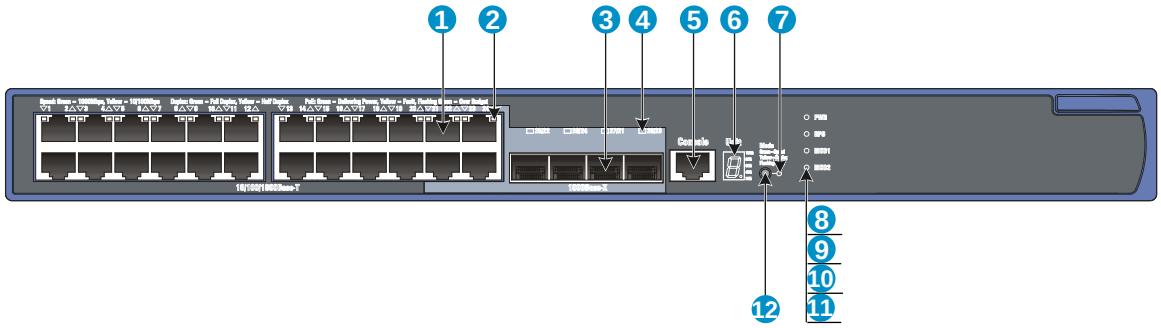


(1) AC-input power receptacle	(2) RPS receptacle (with filler panel)
(3) Grounding screw	(4) "DO NOT REMOVE" label

A5120-24G-PoE+ EI (2 slots)/A5120-24G-PoE+ EI TAA (2 slots)

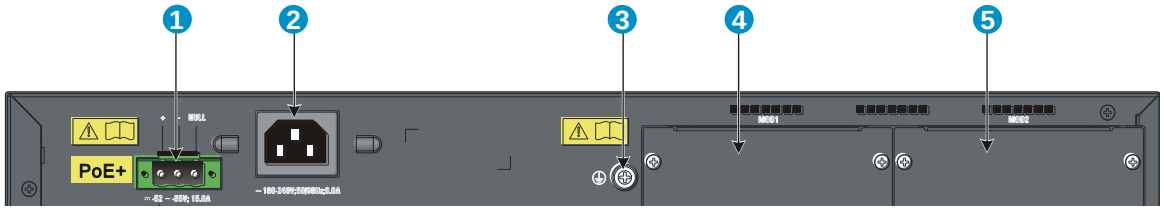
The A5120-24G-PoE+ EI (2 slots) and A5120-24G-PoE+ EI TAA (2 slots) switches come with the expansion interface card slots covered by filler panels.

Figure 56 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

Figure 57 Rear panel

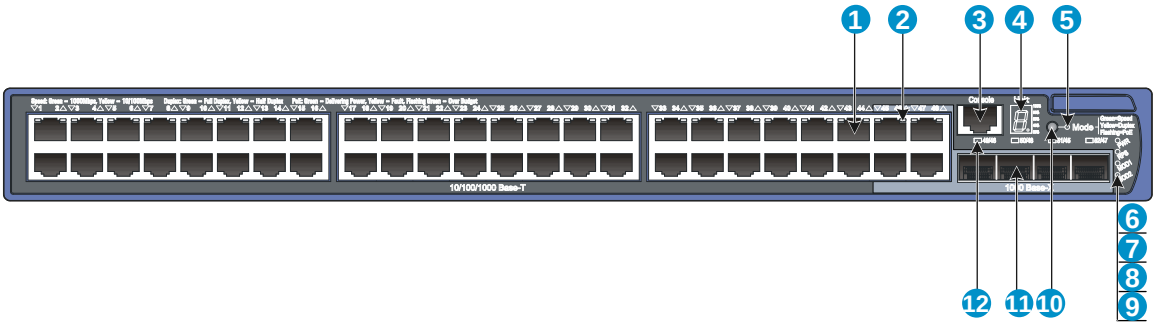


(1) RPS receptacle	(2) AC-input power receptacle
(3) Grounding screw	(4) Interface card slot 1 (MOD1)
(5) Interface card slot 2 (MOD2)	

A5120-48G-PoE+ EI (2 slots)/A5120-48G-PoE+ EI TAA (2 slots)

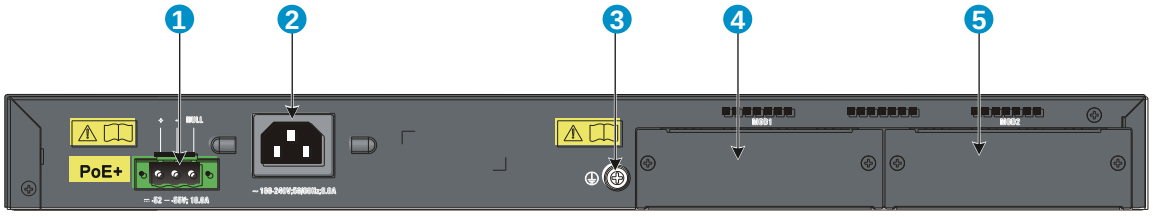
The A5120-48G-PoE+ EI (2 slots) and A5120-48G-PoE+ EI TAA (2 slots) switches come with the expansion interface card slots covered by filler panels.

Figure 58 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

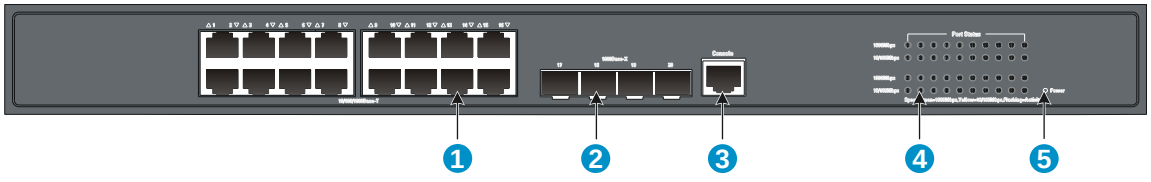
Figure 59 Rear panel



(1) RPS receptacle	(2) AC-input power receptacle
(3) Grounding screw	(4) Interface card slot 1 (MOD1)
(5) Interface card slot 2 (MOD2)	

A5120-16G SI

Figure 60 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 1000Base-X SFP port

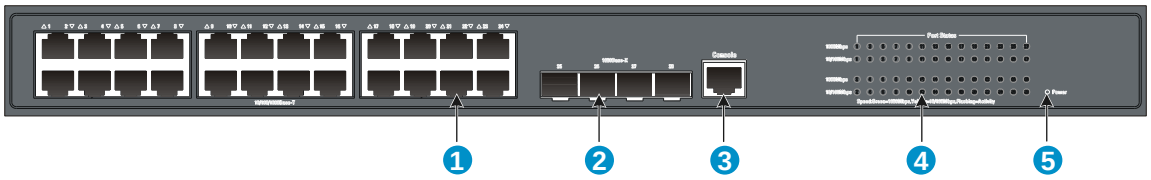
(3) Console port	(4) Port LED
(5) Power LED (Power)	

Figure 61 Rear panel

(1) AC-input power receptacle	(2) Grounding screw

A5120-24G SI

Figure 62 Front panel



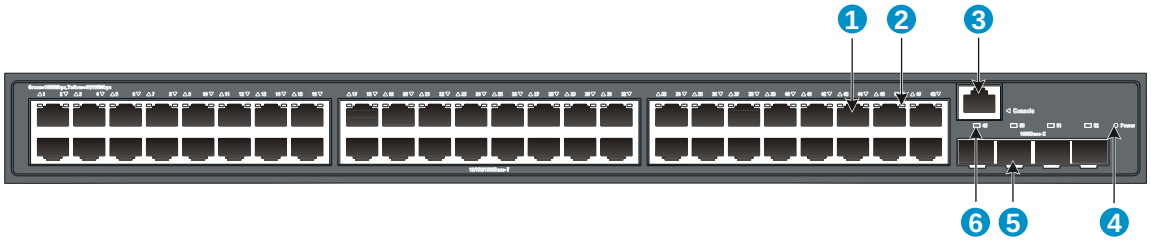
(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) 1000Base-X SFP port
(3) Console port	(4) Port LED
(5) Power LED (Power)	

Figure 63 Rear panel

(1) AC-input power receptacle	(2) Grounding screw

A5120-48G SI

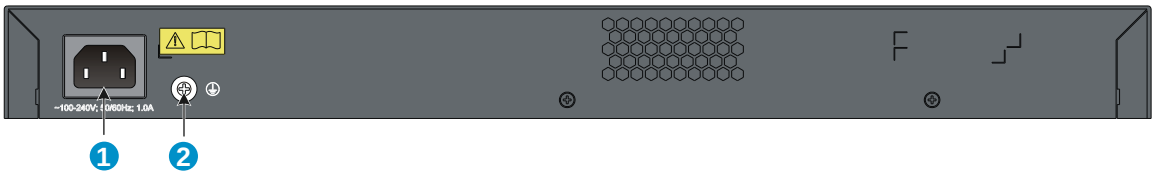
Figure 64 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port
(2) 10/100/1000Base-T Ethernet port LED

(3) Console port	(4) Power LED (Power)
(5) 1000Base-X SFP port	(6) 1000Base-X SFP port LED

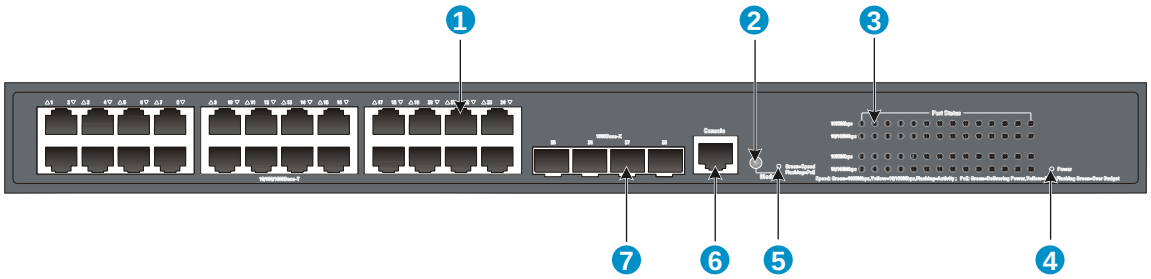
Figure 65 Rear panel



(1) AC-input power receptacle	(2) Grounding screw

A5120-24G-PPoE+ SI

Figure 66 Front panel



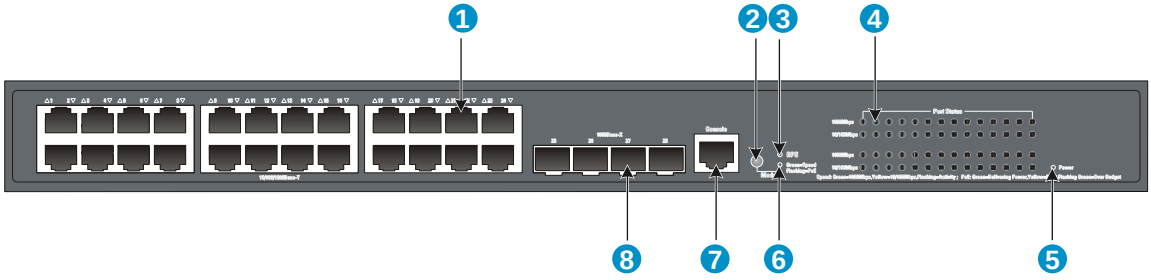
(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) Port LED mode switching button
(3) Port LED	(4) Power LED (Power)
(5) Port mode LED	(6) Console port
(7) 1000Base-X SFP port	

Figure 67 Rear panel

(1) AC-input power receptacle	(2) Grounding screw

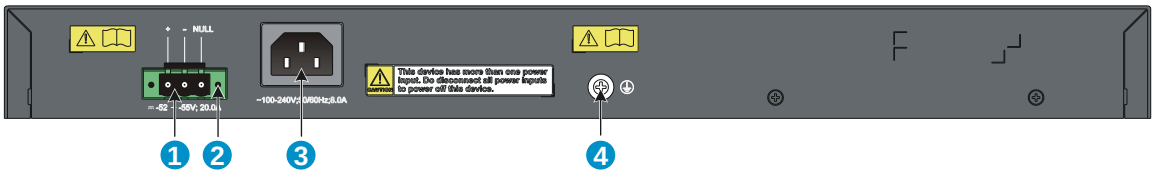
A5120-24G-PoE+ SI

Figure 68 Front panel



(1) 10/100/1000Base-T auto-sensing Ethernet port	(2) Port LED mode switching button
(3) RPS status LED (RPS)	(4) Port LED
(5) Power LED (Power)	(6) Port mode LED
(7) Console port	(8) 1000Base-X SFP port

Figure 69 Rear panel



(1) DC receptacle	(2) Screw hole of the plug
(3) AC-input power receptacle	(4) Grounding screw

Technical specifications

Chassis dimensions and weights

Chassis	Dimensions Dimensions (H × W × D)	Weight
A5120-24G EI A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots)	43.6 × 440 × 300 mm (1.72 × 17.32 × 11.81 in)	< 4.5 kg (9.92 lb)
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in)	< 7.0 kg (15.43 lb)
A5120-48G EI A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots)	43.6 × 440 × 300 mm (1.72 × 17.32 × 11.81 in)	< 5 kg (11.02 lb)
A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in)	< 7.5 kg (16.53 lb)
A5120-16G SI A5120-24G SI	43.6 × 440 × 160 mm (1.72 × 17.32 × 6.30 in)	≤ 3 kg (6.61 lb)
A5120-24G-PPoE+ SI A5120-24G-PoE+ SI	43.6 × 440 × 420 mm (1.72 × 17.32 × 16.54 in)	≤ 7 kg (15.43 lb)
A5120-48G SI	43.6 × 440 × 260 mm (1.72 × 17.32 × 10.24 in)	≤ 5 kg (11.02 lb)

Ports and interface card slots

Chassis	Console ports	10/100/1000Base-T auto-sensing Ethernet ports	1000Base-X SFP ports	Interafce card slots
A5120-24G EI	1	24	4	N/A
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots)	1	24	4	2
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots)	1	24, PoE+	4	2
A5120-48G EI	1	48	4	N/A
A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots)	1	48	4	2
A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	1	48, PoE+	4	2
A5120-16G SI	1	16	4	N/A
A5120-24G SI	1	24	4	N/A

Chassis	Console ports	10/100/1000Base-T auto-sensing Ethernet ports	1000Base-X SFP ports	Interafce card slots
A5120-24G-PoE+ SI	1	24, PoE+	4	N/A
A5120-24G-PPoE+ SI	1	24, PPoE+	4	N/A
A5120-48G SI	1	48	4	N/A

NOTE:

On an A5120 EI 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 16. They form four combo interfaces. When one port in a pair is activated, the other port automatically shuts down.

Power specifications

Power input types

Chassis	AC-input power receptacle	RPS receptacle
All A5120 EI chassis, A5120-24G-PoE+ SI	1	1
All A5120 SI chassis but the A5120-24G-PoE+ SI	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
A5120-24G EI A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-48G EI A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots)	10.8 VDC to 13.2 VDC	A-RPS800 (JD183A)

Chassis	RPS input rated voltage range	Compatible RPS
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	–52 VDC to –55 VDC	A-RPS1600 (JG136A)
A5120-24G-PoE+ SI	–52 VDC to –55 VDC	A-RPS1600 (JG136A)

Power consumption specifications for non-PoE switches

Chassis	Minimum power consumption	Maximum power consumption
A5120-24G EI	35 W	62 W
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots)	36 W	103 W
A5120-48G EI	54 W	110 W
A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots)	55 W	145 W
A5120-16G SI	11.9 W	25.1 W
A5120-24G SI	13.4 W	31.5 W
A5120-48G SI	25.7 W	59.8 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)
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots)	30 W	370 W	62 W	585 W at AC input 491 W at RPS DC input
A5120-48G-PoE+ EI (2 slots) A5120-48G-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)	90 W	651 W at AC input 921 W at RPS DC input
A5120-24G-PoE+ SI	30 W	370 W at AC input 740 W at RPS DC input	45.6 W at AC input 27.5 W at RPS DC input	528 W at AC input 832 W at RPS DC input

Chassis	Maximum PoE power per port	Total PoE output	Minimum power consumption	Maximum power consumption (including total PoE output)
A5120-24G-PPoE+ SI	30 W	170 W	25.0 W	255 W

Cooling system

All A5120 EI and A5120 SI switches use fixed fans for heat dissipation. The airflow is from left to right.

Chassis	Fixed fans
A5120-24G EI A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-48G EI A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots)	4
A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots)	6
A5120-16G SI A5120-24G SI A5120-48G SI	1
A5120-24G-PPoE+ SI	3
A5120-24G-PoE+ SI	6

Appendix B FRUs and compatibility matrixes

This appendix describes the FRUs available for the A5120 EI and A5120 SI switches, and their compatibility.

Interface cards (A5120 EI switches only)

The interface cards in this section are available for all A5120 EI switches except the A5120-24G EI and A5120-48G EI switches.

Card model	Product code	Description	Support for IRF	Compatible transceiver modules/cables
LSPM2GP2P	JD367A	Provides two Gbps SFP fiber ports	No	See "GE SFP transceiver modules." NOTE: The 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."

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 (A5120 EI switches only)

NOTE:

- To guarantee the functionality of the SFP/SFP+/XFP ports, use only HP transceiver modules.
- Transceiver modules availability for this switch series changes 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 "*Pluggable SFP/SFP+/XFP Transceiver Modules Installation Guide*."

GE SFP transceiver modules

IMPORTANT:

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

Product code	Module description	Central wavelength (nm)	Cable/fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
JD118B	HP X120 1G SFP LC SX Transceiver	850	50/125	500	550 m (1804.46 ft)
				400	500 m (1640.42 ft)
			62.5/125	200	275 m (902.23 ft)
				160	220 m (721.78 ft)
JD119B	HP X120 1G SFP LC LX Transceiver	1310	9/125	N/A	10 km (6.21 miles)
			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)

10-GE SFP+ transceiver modules

NOTE:

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

Product code	Module description	Central wavelength (nm)	Fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
JD092B	HP X130 10G SFP+ LC SR Transceiver	850	50/125	2000	300 m (984.25 ft)
				500	82 m (269.03 ft)
				400	66 m (216.54 ft)
			62.5/125	200	33 m (108.27 ft)
				160	26 m (85.3 ft.)
JD093B	HP X130 10G SFP+ LC LRM Transceiver	1310	50/125	1500, 500	220 m (721.78 ft)
				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)

SFP+ cables

Product code	Cable description	Cable length
JD095B	HP X240 10G SFP+ SFP+ 0.65m DA Cable	0.65 m (2.13 ft)
JD096B	HP X240 10G SFP+ SFP+ 1.2m DA Cable	1.2 m (3.94 ft)
JD097B	HP X240 10G SFP+ SFP+ 3m DA Cable	3 m (9.84 ft)
JG081B	HP X240 10G SFP+ SFP+ 5m DA Cable	5 m (16.40 ft)

Figure 70 SFP+ cable

(1) Pull latch	(2) Connector

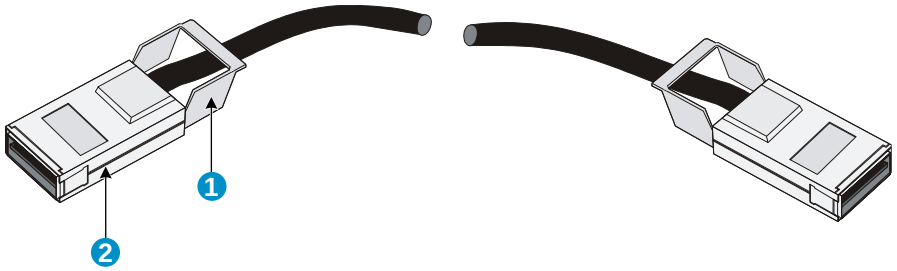
10-GE XFP transceiver modules

Product code	Module description	Central wavelength (nm)	Fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Max transmission distance
JD117B	HP X130 10G XFP LC SR Transceiver	850	50/125	2000	300 m (984.25 ft)
				500	82 m(269.03 ft)
				400	66 m(216.54 ft)
			62.5/125	220	33 m (108.27 ft)
				160	26 m (85.3 ft)
JD108B	HP X130 10G XFP LC LR 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 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 Local Connect CX4 300cm Cable	4X Infiniband	3 m (118.11 in)

Figure 71 CX4 cable



(1) Pull latch	(2) Connector

SFP transceiver modules and SFP Stacking Kit (only for the A5120 SI switches)

IMPORTANT:

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

NOTE:

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

Product code	Module description	Central wavelength (nm)	Cable/fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Maximum transmission distance
JD118B	HP X120 1G SFP LC SX Transceiver	850	50/125	500	550 m (1804.46 ft)
				400	500 m (1640.42 ft)
			62.5/125	200	275 m (902.23 ft)
				160	220 m (721.78 ft)
JD119B	HP X120 1G SFP LC LX Transceiver	1310	9/125	N/A	10 km (6.21 miles)
			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)

Product code	Module description	Central wavelength (nm)	Cable/fiber diameter (μm)	Multimode fiber modal bandwidth (MHz × km)	Maximum transmission distance
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)
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)
JD324A	HP A3600 Switch SFP Stacking Kit	N/A	UTP/STP	N/A	1.5 m (4.92 ft)

Appendix C Ports and LEDs

Ports

Console port

Every A5120 EI or A5120 SI switch provides one console port on the front panel.

Table 14 Console port specifications

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

10/100/1000 Base-T Ethernet port

Table 15 10/100/1000Base-T Ethernet port specifications

Item	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 A5120 EI and A5120 SI switches have 1000Base-X SFP ports.

- For the SFP transceiver modules available for the A5120 EI switches, see "GE SFP transceiver modules."
- For the SFP transceiver modules available for the A5120 SI switches, see "SFP transceiver modules and SFP Stacking Kit (only for the A5120 SI switches)."

Combo interface (only available on the A5120 EI switches)

On an A5120 EI 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 16. 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 A5120 EI Switch Series Configuration Guides*."

Table 16 Copper/fiber combo ports in pairs

Chassis	SFP port	10/100/1000Base-T Ethernet port
A5120-24G EI (2 slots) A5120-24G EI TAA (2 slots) A5120-24G-PoE+ EI (2 slots) A5120-24G-PoE+ EI TAA (2 slots) A5120-24G EI	GigabitEthernet 1/0/25	GigabitEthernet 1/0/22
	GigabitEthernet 1/0/26	GigabitEthernet 1/0/24
	GigabitEthernet 1/0/27	GigabitEthernet 1/0/21
	GigabitEthernet 1/0/28	GigabitEthernet 1/0/23
A5120-48G EI (2 slots) A5120-48G EI TAA (2 slots) A5120-48G-PoE+ EI (2 slots) A5120-48G-PoE+ EI TAA (2 slots) A5120-48G EI	GigabitEthernet 1/0/49	GigabitEthernet 1/0/46
	GigabitEthernet 1/0/50	GigabitEthernet 1/0/48
	GigabitEthernet 1/0/51	GigabitEthernet 1/0/45
	GigabitEthernet 1/0/52	GigabitEthernet 1/0/47

LEDs (for the A5120 EI switches)

Table 17 LEDs at a glance

LED	Availability
System status LED	Entire series
RPS status LED	Entire series
Port mode LED	Entire series
Seven-segment LED	Entire series
10/100/1000 Base-T Ethernet port LED	Entire series
SFP port LED	Entire series
Interface card status LED	Entire series (except the A5120-24G EI and A5120-48G EI)

System status LED

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

Table 18 System status LED description

LED mark	Status	Description
PWR	Steady green	The switch is operating properly.

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

RPS status LED

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

Table 19 RPS status LED description for the non-PoE switches

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

Table 20 RPS status LED description for the PoE switches

LED mark	Status	Description
RPS	Steady green	Both the RPS DC input and the AC input are normal.
	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 which type of information is being shown by the network port LEDs.

You can use the port LED mode switching button to change the type of port information that is displayed.

Table 21 Port mode LED description

LED mark	Status	Description
Mode	Steady green	The network port LEDs are showing port rates.
	Flashing green (1 Hz) (available only for the PoE switches)	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, as described in Table 22.

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 23). The PoE switches include:

- A5120-24G-PoE+ EI (2 slots)
- A5120-24G-PoE+ EI TAA (2 slots)
- A5120-48G-PoE+ EI (2 slots)
- A5120-48G-PoE+ EI TAA (2 slots)

Table 22 Seven-segment LED description (I)

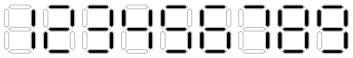
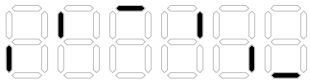
System status LED (PWR) status	Seven-segment LED (Unit) status	Description
Flashing green	The LED displays numbers one by one. 	POST is running, and the LED displays the ongoing test item ID.
Flashing red	The LED displays flashing numbers. 	POST has failed, and the LED flashes the ID of the failed test 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 overheated 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. The A5120-24G EI and A5120-48G EI switches do not support IRF.

Table 23 Seven-segment LED description (II)

Port mode LED (Mode) status	System status LED (PWR) status	Seven-segment LED (Unit) status	Description
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.

10/100/1000 Base-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 port information that is displayed.

Table 24 10/100/1000Base-T auto-sensing Ethernet port LEDs description

Port mode LED (Mode) status	Port LED status	Description
Steady green (rate mode)	Steady green	The port is operating at 1000 Mbps. The port LED fast flashes when the port is sending or receiving data.
	Steady yellow	The port is operating at 10/100 Mbps. The port 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.
Flashing green (1 Hz) (PoE mode, available only for PoE switches)	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.
	Steady yellow	The port is experiencing a PoE failure. 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 yellow (duplex mode)	Steady green	The port is operating in full duplex mode. The port LED fast flashes when the port is sending or receiving data.
	Steady yellow	The port is operating in half duplex mode. The port 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.

SFP port LED

Each 1000Base-X 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 port information that is displayed.

Table 25 SFP port LEDs description

Port mode LED (Mode) status	Port LED status	Description
Steady green (rate mode) or flashing green (1 Hz, PoE mode)	Steady green	The port is operating at 1000 Mbps. The port 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 yellow (duplex mode)	Steady green	The port is operating in full duplex mode. The port 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.

Interface card status LED

Table 26 Interface card status LED description

LED mark	Status	Description
MOD1 MOD2	Green	The interface card is in position and operating properly.
	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.

LEDs (for the A5120 SI switches)

Table 27 LEDs at a glance

LED	Availability
Power LED	Entire series
RPS status LED	A5120-24G-PoE+ SI
Port mode LED	A5120-24G-PPoE+ SI, A5120-24G-PoE+ SI
10/100/1000 Base-T Ethernet port LED	Entire series
1000Base-X SFP port LED	Entire series

Power LED

The power LED shows the operation status of the switch.

Table 28 Power LED description

LED mark	Status	Description
Power	Steady green	The switch is operating properly.
	Flashing green (1 Hz)	The system is performing power-on self test (POST) or downloading software.
	Flashing green (3 Hz)	POST has failed or another fatal error has been detected.
	Off	The switch has been powered off.

RPS status LED

The A5120-24G-PoE+ SI switch has one RPS status LED on its front panel to show the operating status of the RPS DC input.

Table 29 RPS status LED description

LED mark	Status	Description
RPS	Steady green	The RPS DC input is normal.
	Off	The RPS unit is not connected or the RPS DC input is abnormal.

Port mode LED

The A5120-24G-PPoE+ SI and A5120-24G-PoE+ SI switches have a port mode LED to indicate the type of information that the network port LEDs (excluding the SFP port LEDs) are showing. You can use the port LED mode switching button to change the type of port information that is displayed.

Table 30 Port mode LED description

LED mark	Status	Description
Mode	Steady green	The network port LEDs are showing port rates.
	Flashing green (1 Hz)	The network port LEDs are showing the status of PoE power supply on the ports.

10/100/1000 Base-T Ethernet port LED

The A5120-48G SI switch has one bi-color LED (see Table 31) for each 10/100/1000Base-T Ethernet port. All other A5120 SI switches have two LEDs (see Table 32) for each 10/100/1000Base-T Ethernet port.

The A5120-24G-PPoE+ SI and A5120-24G-PoE+ SI switches also use a port mode LED to indicate the type of information that the port LEDs are displaying (see Table 33).

Table 31 Ethernet port LED description (A5120-48G SI)

Status	Description
Steady green	The port is operating at 1000 Mbps.
Fast flashing green	The port is sending or receiving data at 1000 Mbps.
Steady yellow	The port is operating at 10/100 Mbps.
Fast flashing yellow	The port is sending or receiving data at 10/100 Mbps.
Off	No link is present on the port.

Table 32 Ethernet port LEDs description (A5120-16G SI/A5120-24G SI)

LED	Status	Description
Green	On	The port is operating at 1000 Mbps.
	Fast flashing	The port is sending or receiving data at 1000 Mbps.
	Off	The port has no link or is not operating at 1000 Mbps.
Yellow	On	The port is operating at 10/100 Mbps.
	Fast flashing	The port is sending or receiving data at 10/100 Mbps.
	Off	The port has no link or is not operating at 10/100 Mbps.

Table 33 Ethernet port LED description (A5120-24G-PPoE+ SI/A5120-24G-PoE+ SI)

Port mode LED (Mode) status	Port LED	Port LED status	Description
Steady green (rate mode)	Green	On	The port is operating at 1000 Mbps.
		Fast flashing	The port is sending or receiving data at 1000 Mbps.
		Off	The port has no link or is not operating at 1000 Mbps.
	Yellow	On	The port is operating at 10/100 Mbps.
		Fast flashing	The port is sending or receiving data at 10/100 Mbps.
		Off	No link is present on the port.
Flashing green (PoE mode)	Green	On	PoE power supply is normal.
		Flashing at 3 Hz	The device attached to the port requires power higher than the maximum or currently available PoE output power on the port.
		Off	The port is not supplying power.
	Yellow	On	
		Off	

1000Base-X SFP port LED

Table 34 1000Base-X SFP port LEDs description

Status	Description
Steady green	The port is operating at 1000 Mbps.
Flashing green	The port is sending or receiving data.
Off	No link is present on the port.

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