



HPE FlexNetwork 5140 HI Switch Series Installation Guide

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Preparing for installation

Table 1 describes the HPE FlexNetwork 5140 HI switches, power supplies, and interface cards available for the switches.

Table 1 HPE 5140 HI switch models and power supplies

Product code	HPE description	Alias
HPE 5140 HI switches		
R9L61A	HPE FlexNetwork 5140 24G 4SFP+ 1-slot HI Switch	HPE 5140 24G 4SFP+ 1-slot HI
R9L62A	HPE FlexNetwork 5140 48G 4SFP+ 1-slot HI Switch	HPE 5140 48G 4SFP+ 1-slot HI
R9L63A	HPE FlexNetwork 5140 24G PoE+ 4SFP+ 1-slot HI Switch	HPE 5140 24G PoE+ 4SFP+ 1-slot HI
R9L64A	HPE FlexNetwork 5140 48G PoE+ 4SFP+ 1-slot HI Switch	HPE 5140 48G PoE+ 4SFP+ 1-slot HI
Power supplies		
JD362B	HPE X361 150W AC Power Supply	PSR150-A1
JD366B	HPE X361 150W DC Power Supply	PSR150-D1
JG545A	HPE X362 1110W AC PoE Power Supply	PSR1110-56A
JG544A	HPE X362 720W AC PoE Power Supply	PSR720-56A
Interface cards		
JH156A	HPE 5130/5510 10GBASE-T 2-port Module	LSWM2XGT2PM
JH157A	HPE 5130/5510 10GbE SFP+ 2-port Module	LSWM2SP2PM
R9L65A	HPE 5140/5520 10GBASE-T MACsec 2-port Module	LSWM2XMGT2PM

For regulatory identification purposes, the HPE 5140 HI switches are assigned Regulatory Model Number (RMN), which are listed in the following table. These regulatory numbers should not be confused with the marketing name HPE 5140 HI, or the product codes.

Product code	RMN	HPE description
R9L61A	BJNGA-AD0093	HPE FlexNetwork 5140 24G 4SFP+ 1-slot HI Switch
R9L62A	BJNGA-AD0094	HPE FlexNetwork 5140 48G 4SFP+ 1-slot HI Switch
R9L63A	BJNGA-AD0096	HPE FlexNetwork 5140 24G PoE+ 4SFP+ 1-slot HI Switch
R9L64A	BJNGA-AD0097	HPE FlexNetwork 5140 48G PoE+ 4SFP+ 1-slot HI Switch

Safety recommendations

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

- Before cleaning the switch, remove all power cords from the switch. Do not clean the switch with wet cloth or liquid.
- Do not place the switch near water or in a damp environment. Prevent water or moisture from entering the switch chassis.
- Do not place the switch on an unstable case or desk. The switch might be severely damaged in case of a fall.
- Ensure good ventilation of the equipment room and keep the air inlet and outlet vents of the switch free of obstruction.
- Connect the yellow-green protection grounding cable before powering on the switch.
- Make sure the operating voltage is in the required range.
- To avoid electrical shocks, do not open the chassis while the switch is operating or when the switch is just powered off.
- When replacing field replaceable units (FRUs), including expansion cards, power supplies, and fan trays, wear an ESD wrist strap to avoid damaging the units.

Examining the installation site

The switch 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 outlet vents for ventilation.
- The rack or workbench has a good ventilation system.
- Identify the hot aisle and cold aisle at the installation site, and make sure ambient air flows into the switch from the cold aisle and exhausts to the hot aisle.
- Identify the airflow designs of neighboring devices, and prevent hot air flowing out of the neighboring device from entering the device.
- The rack is sturdy enough to support the switch and its accessories.
- The rack or workbench is reliably grounded.

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

Temperature/humidity

For correct operation and long service life of your switch, maintain the temperature and humidity in the equipment room at acceptable ranges.

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

For the temperature and humidity requirements of the switch, see technical specifications in *Hardware Information and Specifications*.

Cleanliness

Dust buildup on the chassis might cause electrostatic adsorption and dust corrosion, resulting in poor contact of metal connectors and contact points. This might shorten the device's lifetime and even cause device failure in the worst case. [Table 2](#) describes the dust concentration limits in the equipment room.

Table 2 Dust concentration limits in the equipment room

Substance	Particle diameter	Concentration limit
Dust particles	$\geq 0.5 \mu\text{m}$	$\leq 3.5 \times 10^6 \text{ particles/m}^3$
Dust particles	$\geq 5 \mu\text{m}$	$\leq 3 \times 10^4 \text{ particles/m}^3$
Dust (suspension)	$\leq 75 \mu\text{m}$	$\leq 0.2 \text{ mg/m}^3$
Dust (sedimentation)	75 μm to 150 μm	$\leq 1.5 \text{ mg/(m}^2\text{h)}$

To maintain cleanliness in the equipment room, follow these guidelines:

- Keep the equipment room away from pollution sources. Do not smoke, eat, or drink in the equipment room.
- Use double-layer glass in windows and seal doors and windows with dust-proof rubber strips. Use screen doors and window screens for doors and windows open to the outside and make sure the external windows are air tight.
- Use dustproof materials for floors, walls, and ceilings and use wallpaper or matt paint that does not produce powders.
- Clean the equipment room regularly and clean the air filters of the rack each month.
- Wear ESD clothing and shoe covers before entering the equipment room, keep the ESD clothing and shoe covers clean, and change them frequently.

Corrosive gas limit

Corrosive gases can accelerate corrosion and aging of metal components. Make sure the corrosive gases in the equipment room do not exceed the concentration limits as shown in [Table 3](#).

Table 3 Corrosive gas concentration limits in the equipment room

Gas	Average concentration (mg/m^3)	Maximum concentration (mg/m^3)
SO_2	0.3	1.0
H_2S	0.1	0.5
Cl_2	0.1	0.3
HCl	0.1	0.5
HF	0.01	0.03
NH_3	1.0	3.0
O_3	0.05	0.1
NO_x	0.5	1.0



CAUTION:

As a best practice, control the corrosive gas concentrations in the equipment room at their average values. Make sure the corrosive gas concentrations do not exceed 30 minutes per day at their maximum values.

To control corrosive gases, use the following guidelines:

- As a best practice, do not build the equipment room in a place with a high concentration of corrosive gases.
- Make sure the equipment room is not connected to sewer, vertical shaft, or septic tank pipelines and keep it far away from these pipelines. The air inlet of the equipment room must be away from such pollution sources.
- Use environmentally friendly materials to decorate the equipment room. Avoid using organic materials that contains harmful gases, such as sulfur or chlorine-containing insulation cottons, rubber mats, sound-proof cottons, and avoid using plasterboards with high sulfur concentration.
- Place fuel (diesel or gasoline) engines separately. Do not place them in the same equipment room with the device. Make sure the exhausted air of the engines will not flow into the equipment room or towards the air inlet of the air conditioners.
- Place batteries separately. Do not place them in the same room with the device.
- Employ a professional company to monitor and control corrosive gases in the equipment room regularly.

EMI

All electromagnetic interference (EMI) sources, from outside or inside of the switch and application system, adversely affect the switch in the following ways:

- A conduction pattern of capacitance coupling.
- Inductance coupling.
- Electromagnetic wave radiation.
- Common impedance (including the grounding system) coupling.

To prevent EMI, use the following guidelines:

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

Laser safety



WARNING!

The switch is Class 1 laser device. Do not stare into any fiber port when the switch has power. The laser light emitted from the optical fiber might hurt your eyes.

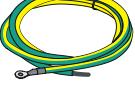
Installation tools

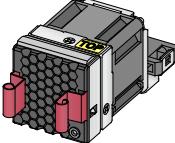
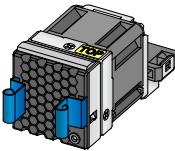
- Flat-blade screwdriver
- Phillips screwdriver
- ESD wrist strap

All these installation tools are user supplied.

Installation accessories

Table 4 Installation accessories

Product code	Description	Quantity	Applicable models
5066-0850	1 U four-hole mounting bracket kit (including one pair of mounting brackets and eight M4 countersunk screws) 	1 kit	All HPE 5140 HI switches
5190-0297	Rear mounting bracket kit (including one pair of mounting brackets and two load-bearing screws) 	1 kit	<ul style="list-style-type: none"> HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI
N/A	M6 screw and floating nut (user supplied) 	As required	All HPE 5140 HI switches
5185-9292	Grounding cable (tin-plated at one end and with a ring terminal at the other end) 	1	<ul style="list-style-type: none"> HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI
5185-9408	Grounding cable (with ring terminals at both ends) 	1	<ul style="list-style-type: none"> HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI
5185-8503	Power supply filler panel 	1	<ul style="list-style-type: none"> HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI
5190-1774	Power supply filler panel 	1	<ul style="list-style-type: none"> HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI
5190-0296	Interface card filler panel 	1	All HPE 5140 HI switches
5060-0174	HPE X722 port to power fan tray (already installed on the switch)	2	All HPE 5140 HI switches

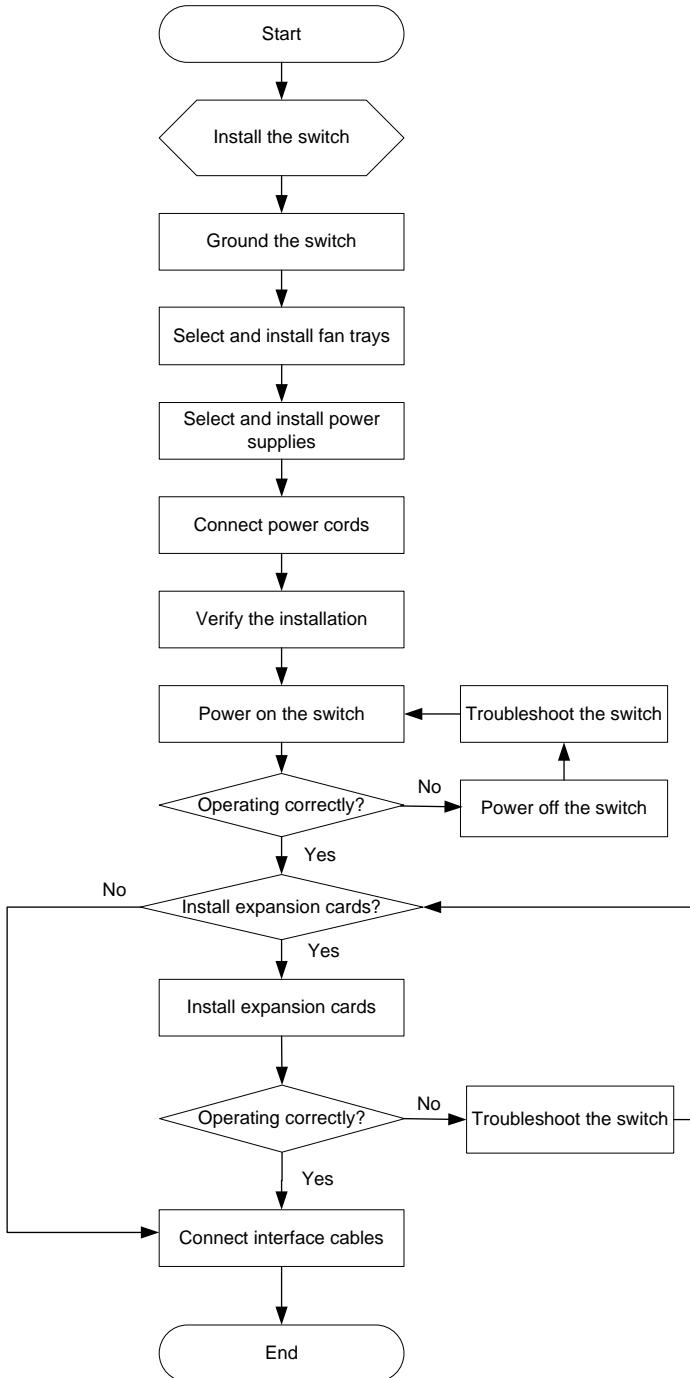
Product code	Description	Quantity	Applicable models
			
5060-0175	HPE X721 power to port fan tray (order as required) 	2	All HPE 5140 HI switches
5185-9443 5080-0120	DC power cord (supplied with the PSR150-D1 (JD366B) DC power supply)  The power cord color code scheme is for illustration only. The cable delivered for your country or region might use a different color scheme.	1	PSR150-D1 (JD366B)
N/A	AC power cord NOTE: The AC power cord part number will differ depending on the country or region.	1	<ul style="list-style-type: none"> • PSR150-A1 (JD362B) • PSR720-56A (JG544A) • PSR1110-56A (JG545A)
5184-7298	Rubber feet 	4	All HPE 5140 HI switches

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 Hewlett Packard Enterprise for permission. Otherwise, Hewlett Packard Enterprise shall not be liable for any consequence.

Figure 1 Hardware installation flow



Installing the switch in a 19-inch rack

Installation methods

Table 5 Installation methods for the HPE 5140 HI switches

Chassis	Installation methods	Installation requirements	Installation procedure
HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI	Using front mounting brackets	Install the front mounting brackets at the port side or power supply side.	See " Rack-mounting the switch by using front mounting brackets. "
HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI	Using front and rear mounting brackets	<ul style="list-style-type: none">Install the front mounting brackets at the port side or power supply side.Install the rear mounting brackets based on the rack depth.<ul style="list-style-type: none">If the rack depth is in the range of 429 to 595 mm (16.89 to 23.43 in), orient the bracket with the wide flange inside the rack.If the rack depth is in the range of 274 to 440 mm (10.79 to 17.32 in) and the distance from the rear rack posts to the inner surface of the cabinet door is longer than 153 mm (6.02 in), orient the bracket with the wide flange outside the rack.	See " Rack-mounting the switch by using front and rear mounting brackets. "

Figure 2 Procedure for rack-mounting the switch by using the front mounting brackets

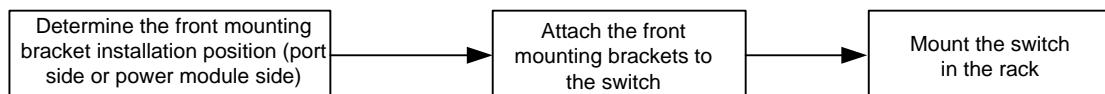
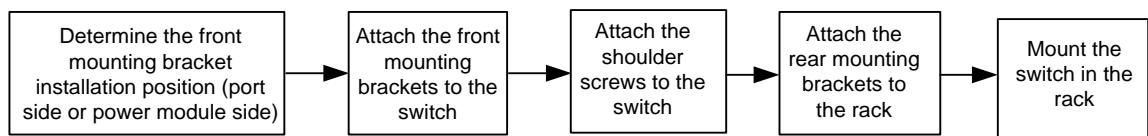


Figure 3 Procedure for rack-mounting the switch by using the front and rear mounting brackets



NOTE:

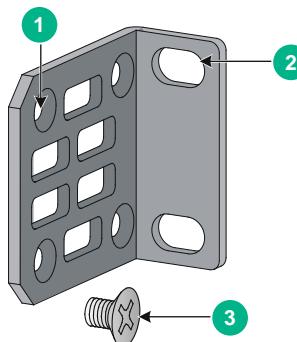
If a rack shelf is available, you can put the switch on the rack shelf, slide the switch to an appropriate location, and attach the switch to the rack by using the mounting brackets.

Installation accessories

Table 6 Installation accessories for the HPE 5140 HI switches

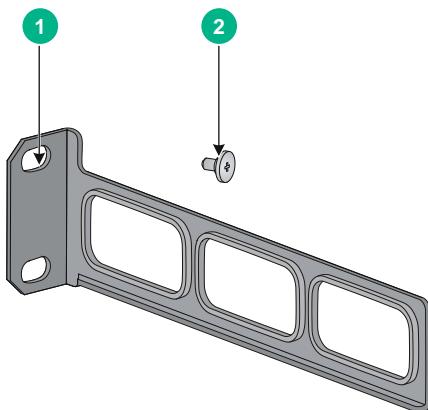
Switch model	Front mounting brackets (Figure 4)	Rear mounting brackets and shoulder screws (Figure 5)
HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI	Provided	N/A
HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI	Provided	Provided

Figure 4 Front mounting bracket



-
- (1) Screw hole for attaching the bracket to the switch (2) Screw hole for attaching the bracket to the rack
(3) M4 screw
-

Figure 5 Rear mounting bracket and shoulder screw



-
- (1) Screw hole for attaching the bracket to the rack (2) Shoulder screw
-

Rack-mounting the switch by using front mounting brackets

Attaching the front mounting brackets to the switch

The HPE 5140 24G 4SFP+ 1-slot HI and HPE 5140 48G 4SFP+ 1-slot HI switches provide two installation positions on the side panels for the front mounting brackets. One is near the power supply side and one is near the port side.

To attach the front mounting brackets to the switch:

1. Determine the mounting position for the front mounting brackets.
2. Align the round holes in the wide flange of one front mounting bracket with the screw holes in the chassis. See [Figure 6](#) and [Figure 7](#).
3. Use M4 screws (provided with the switch) to attach the mounting bracket to the chassis.
4. Repeat the proceeding two steps to attach the other mounting bracket to the chassis.

Figure 6 Attaching the front mounting bracket to the port side

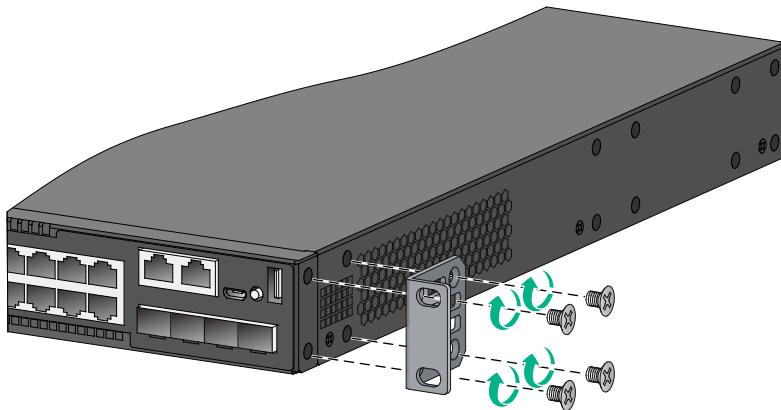
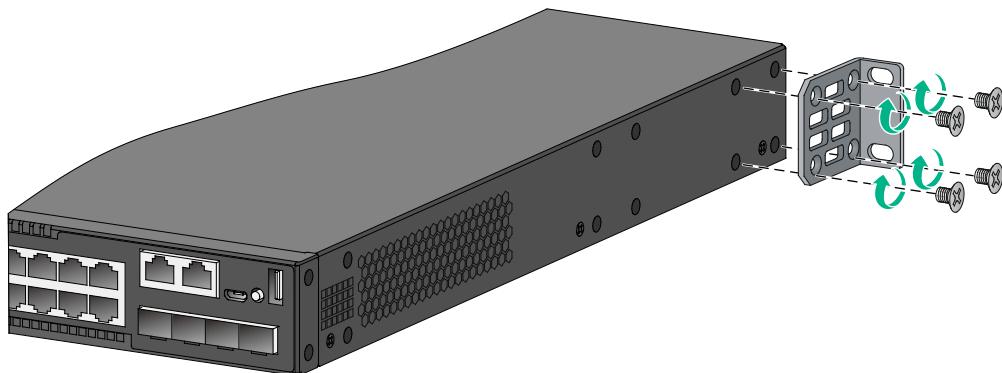


Figure 7 Attaching the front mounting bracket to the power supply side



Mounting the switch in the rack

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Make sure the front mounting brackets have been attached securely to the two sides of the switch.
3. Install cage nuts (user-supplied) in the mounting holes in the rack posts. Make sure the corresponding cage nuts on the left and right front rack posts are at the same height.
4. One person holds the switch chassis and aligns the installation holes on the mounting brackets with the cage nuts on the rack posts.
5. The other person attaches the mounting brackets with M6 screws (user-supplied) to the rack.

Figure 8 Mounting the switch in the rack (front mounting brackets at the port side)

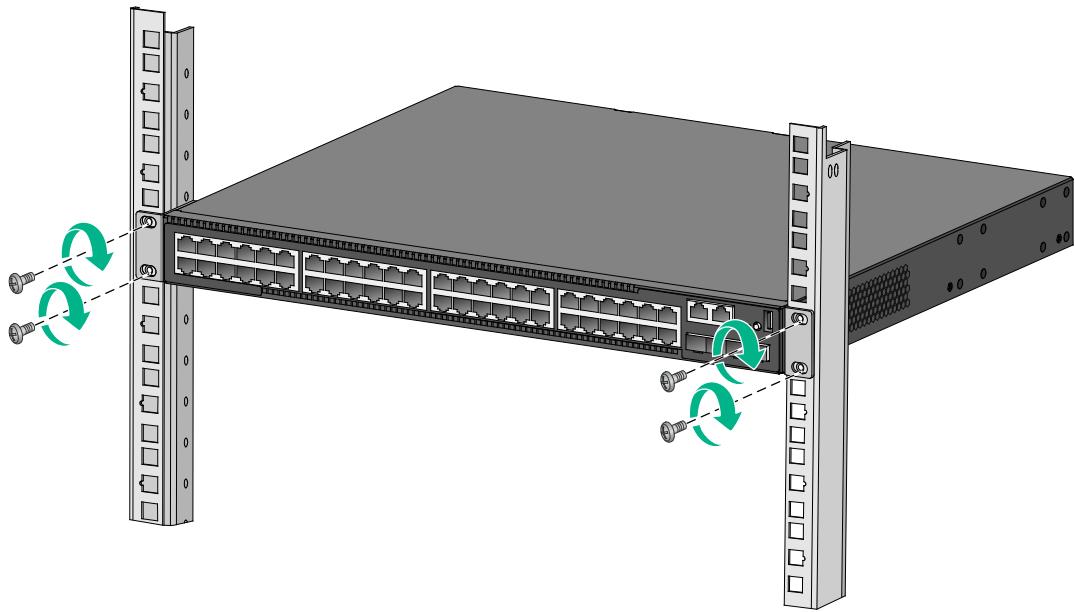
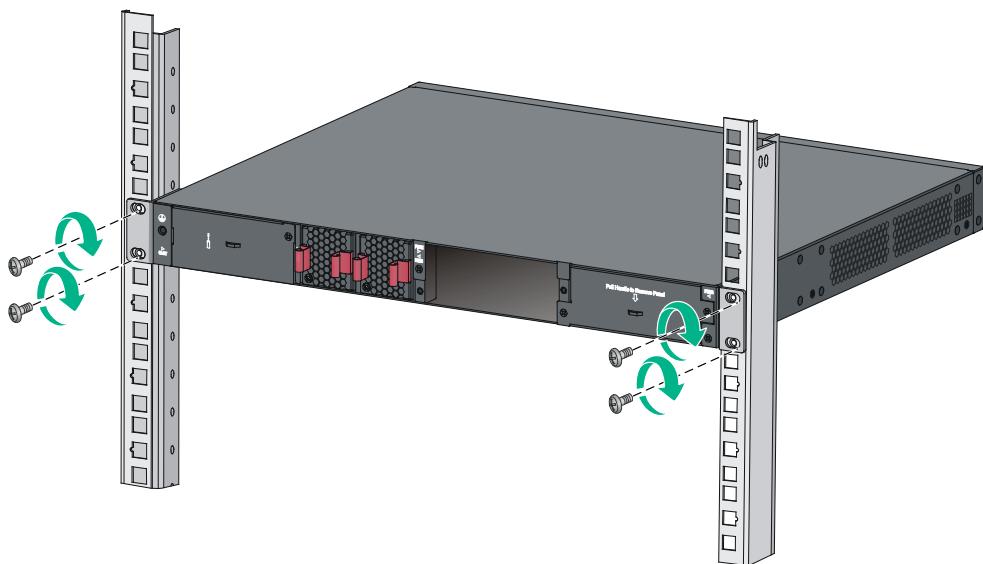


Figure 9 Mounting the switch in the rack (front mounting brackets at the power supply side)



Rack-mounting the switch by using front and rear mounting brackets

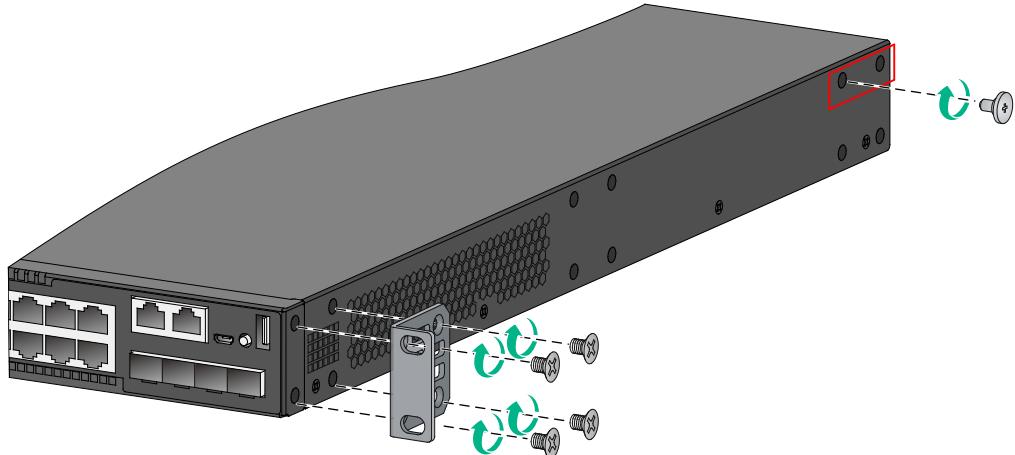
Attaching the front mounting brackets and shoulder screws to the switch

To rack-mount the HPE 5140 24G PoE+ 4SFP+ 1-slot HI and HPE 5140 48G PoE+ 4SFP+ 1-slot HI switches by using the front and rear mounting brackets, you can install the front mounting brackets at the port-side or power supply-side mounting position. The following uses port-side mounting as an example. The power-side mounting is similar.

To attach the front mounting brackets and shoulder screws to the switch:

1. Align the round holes in the wide flange of one front mounting bracket with the screw holes in the port-side mounting position on one side of the chassis. See [Figure 10](#).
2. Use M4 screws (supplied with the switch) to attach the mounting bracket to the chassis.
3. Repeat the proceeding two steps to attach the other mounting bracket to the chassis.
4. Unpack the shoulder screws. Attach the shoulder screw to one of the two installation positions as red-marked in [Figure 10](#).

Figure 10 Attaching the front mounting brackets and shoulder screws to the chassis



Attaching the rear mounting brackets to the rack

1. Determine the switch installation position in the rack.
2. Install cage nuts in the rack posts. Make sure the corresponding cage nuts on the left and right rear rack posts are at the same height.
3. Orient the rear mounting brackets with the wide flange inside or outside the rack as required.
4. Use M6 screws to attach the rear mounting brackets to the rear posts, as shown in [Figure 11](#). Do not fully tighten the M6 screws before mounting the switch in the rack.

Figure 11 Attaching the rear mounting brackets to a rack with the wide flange inside the rack

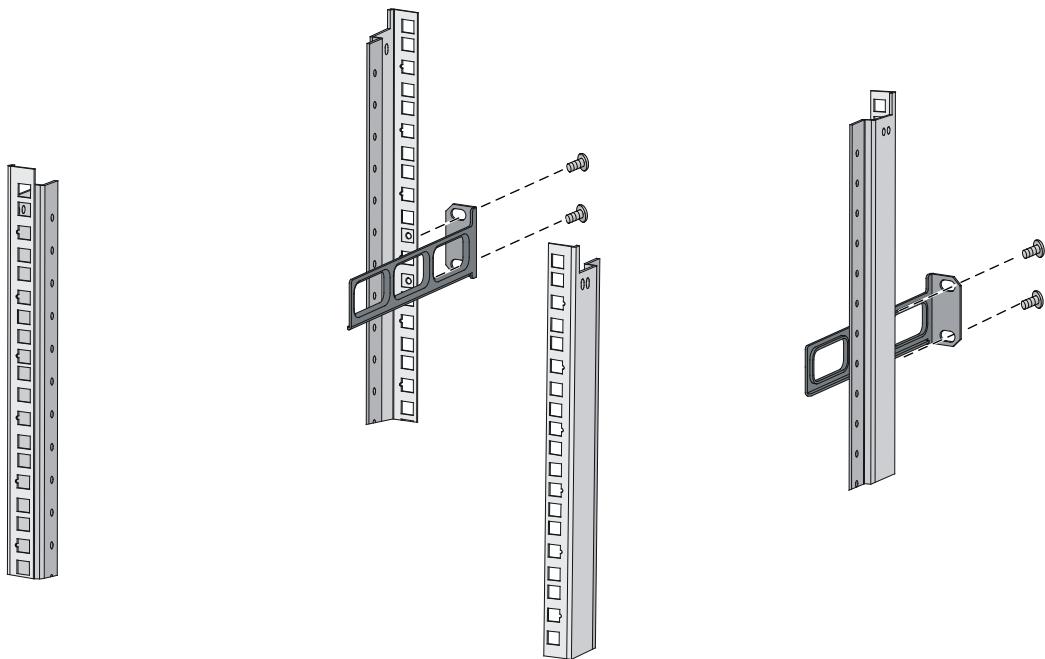
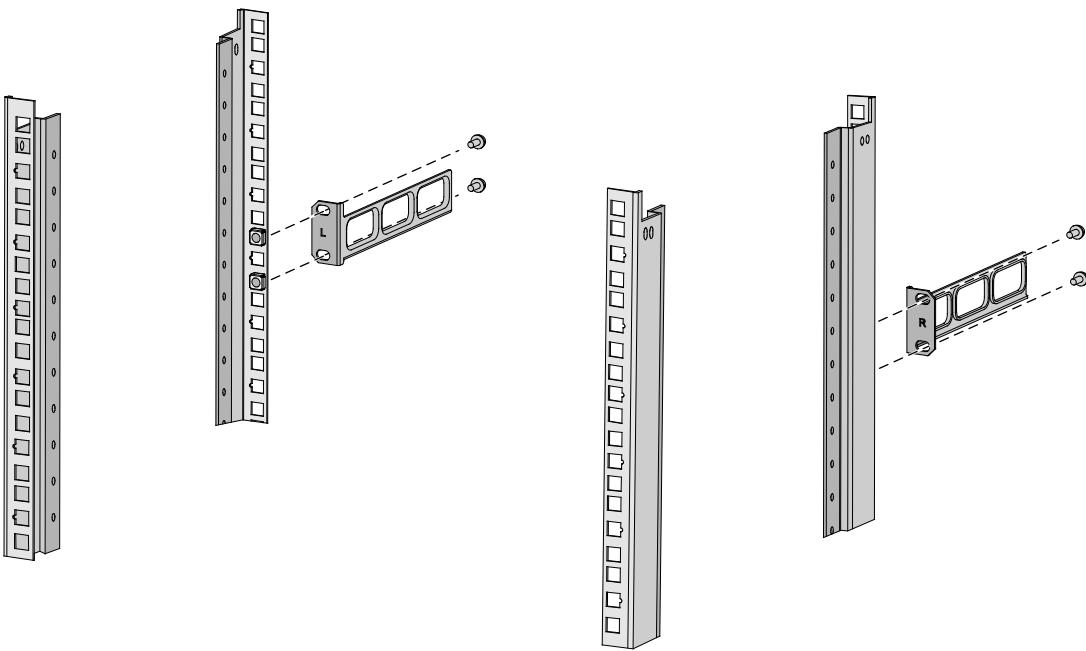


Figure 12 Attaching the rear mounting brackets to a rack with the wide flange outside the rack



Mounting the switch in the rack

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Make sure the front mounting brackets and shoulder screws are securely attached to the two sides of the switch.
3. Attach cage nuts to the front rack posts. Make sure the corresponding cage nuts on the left and right front rack posts are at the same height.

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

Make sure the shoulder screws make close contact with the upper edges of the rear mounting brackets, as shown in [Figure 13](#).

5. The other person attaches the front mounting brackets with M6 screws (user-supplied) to the front rack posts.

Make sure the switch is installed securely in the rack.

Figure 13 Mounting the switch in the rack (with the wide flange of the rear mounting brackets inside the rack)

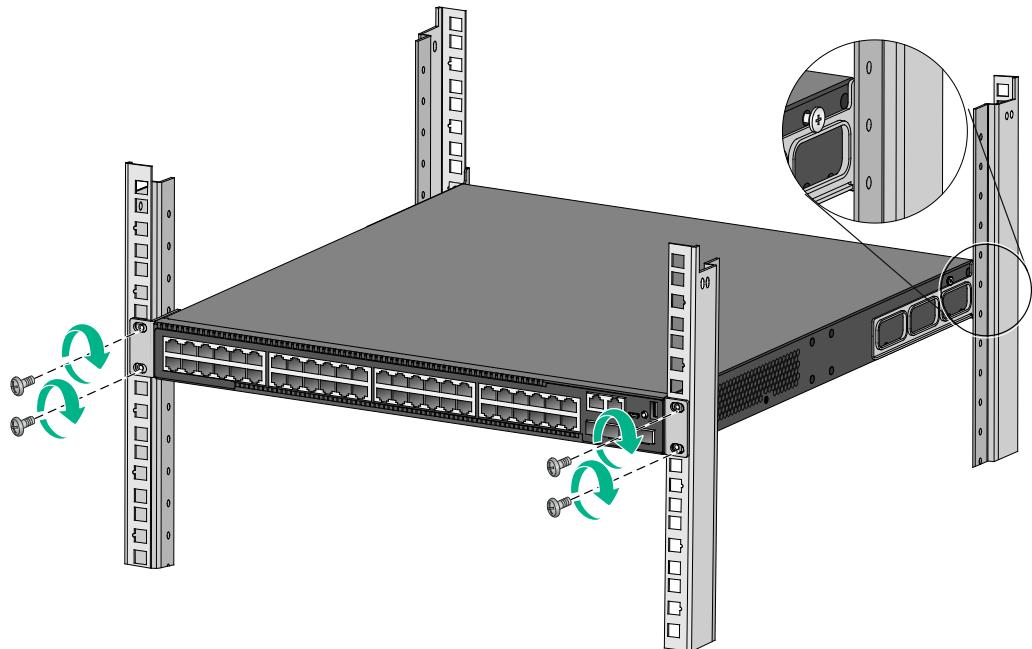
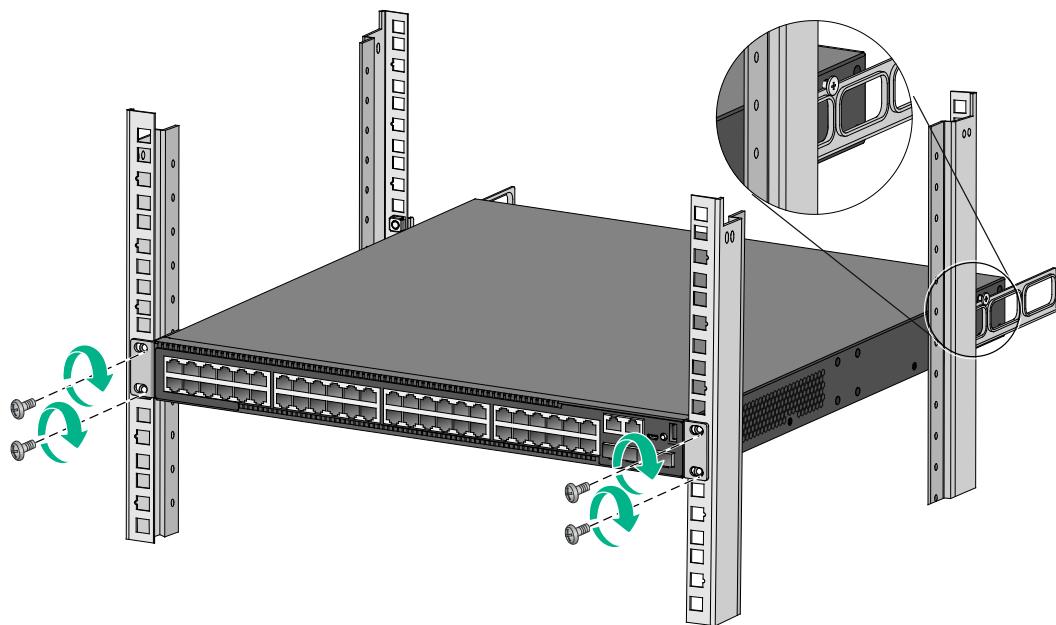


Figure 14 Mounting the switch in the rack (with the wide flange of the rear mounting brackets outside the rack)



Mounting the switch on a workbench

! IMPORTANT:

- Reserve a minimum of 10 cm (3.9 in) of clearance around the chassis for heat dissipation.
 - Do not place heavy objects on the switch.
-

To mount the switch on a workbench:

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

Grounding the switch

! WARNING!

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

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 to minimize the potential for system damage, maximize the safety at the site, and minimize EMI susceptibility of the system.

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

- [Grounding the switch with a grounding strip](#)
 - [Grounding the switch with a grounding conductor buried in the earth ground](#)
-

NOTE:

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

Grounding the switch with a grounding strip

! WARNING!

- Connect the grounding cable to the grounding strip in the equipment room. Do not connect it to a fire main or lightning rod.
 - To guarantee the grounding effect and avoid switch damage, use the grounding cable provided with the switch to connect the switch to a grounding strip in the equipment room.
-

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

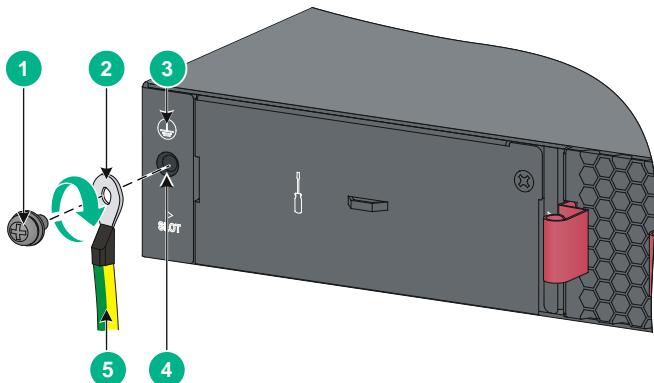
Connecting the grounding cable to the chassis

1. Remove the grounding screw from the rear panel of the switch chassis.
2. Use the grounding screw to attach the ring terminal of the grounding cable to the grounding screw hole. Fasten the screw.

! IMPORTANT:

Orient the grounding cable as shown in [Figure 15](#) so you can easily install or remove the expansion card.

Figure 15 Connecting the grounding cable to the chassis



(1) Grounding screw

(2) Ring terminal

(3) Grounding sign

(4) Grounding hole

(5) Grounding cable

Connecting the grounding cable to a grounding strip (1)

This method is applicable to the HPE 5140 24G PoE+ 4SFP+ 1-slot HI and HPE 5140 48G PoE+ 4SFP+ 1-slot HI switches.

To connect the grounding cable to a grounding strip:

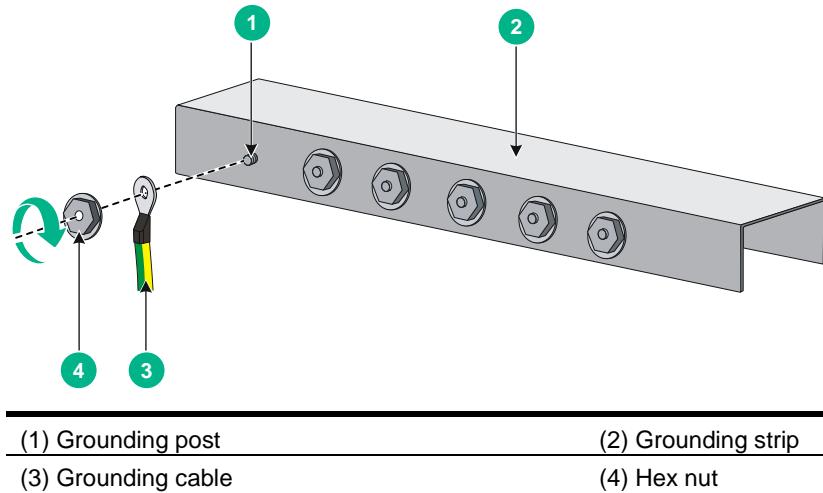
1. Remove the hex nut of a grounding post on the grounding strip.
2. Cut the grounding cable to a length required for connecting to the grounding strip.
3. Attach a ring terminal to the grounding cable:
 - a. Use a wire stripper to strip 5 mm (0.20 in) of insulation off the end of the grounding cable.
 - b. Slide the heat-shrink tubing onto the cable and insert the bare metal part into the end of the ring terminal.
 - c. Use a crimper to secure the metal part of the cable to the ring terminal.
 - d. Slide the heat-shrink tubing down the cable until the tube covers the joint.
 - e. Use a heat gun to shrink the tubing around the cable.

Figure 16 Attaching a ring terminal to the grounding cable



4. Connect the ring terminal of the grounding cable to the grounding post of the grounding strip, and fasten it with the removed hex nut.

Figure 17 Connecting the grounding cable to a grounding strip



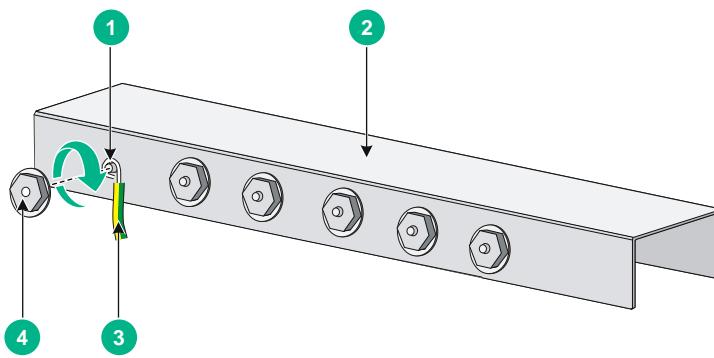
Connecting the grounding cable to a grounding strip (2)

This method is applicable to the HPE 5140 24G 4SFP+ 1-slot HI and HPE 5140 48G 4SFP+ 1-slot HI.

To connect the grounding cable to a grounding strip:

1. Cut the grounding cable to a length required for connecting to the grounding strip.
2. Use a wire stripper to strip 20 mm (0.79 in) of insulation off the end of the grounding cable. Then use needle-nose pliers to bend the bare metal part to the shape as shown in [Figure 18](#). Make sure the bended part can securely attached to the grounding post on the grounding strip.
3. Attach the bended part of the grounding cable to the grounding post and use the hex nut to fasten the bended part to the post.

Figure 18 Connecting the grounding cable to the grounding strip



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

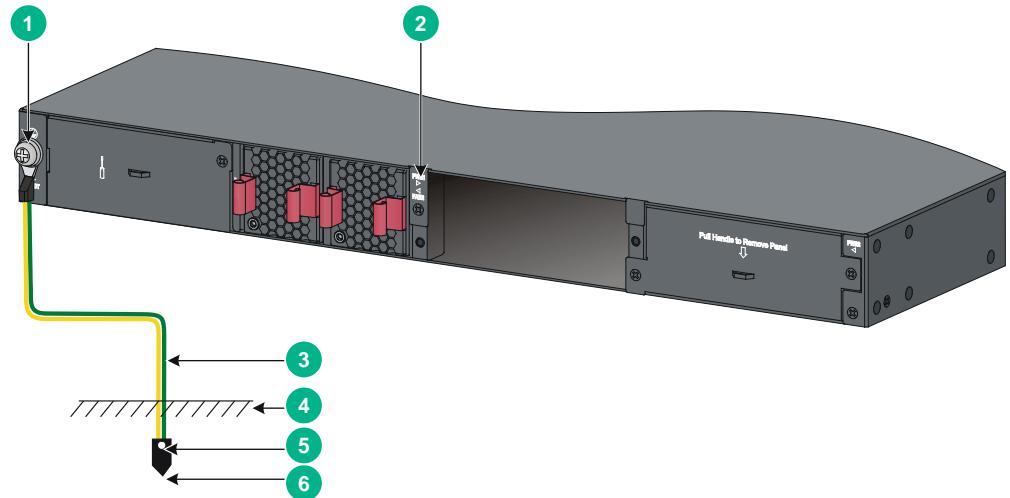
Grounding the switch with a grounding conductor buried in the earth ground

If the installation site does not have any grounding strips, but earth ground is available, hammer a 0.5 m (1.64 ft) or longer angle iron or steel tube into the earth ground to serve as a grounding conductor.

The dimensions of the angle iron must be a minimum of 50 × 50 × 5 mm (1.97 × 1.97 × 0.20 in). The steel tube must be zinc-coated and its wall thickness must be a minimum of 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 19 Grounding the switch by burying the grounding conductor into the earth ground



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

Installing/removing a power supply

⚠️ WARNING!

In power redundancy mode, you can replace a power supply without powering off the switch but you must strictly follow the installation and removal procedures in [Figure 20](#) and [Figure 21](#) to avoid any bodily injury or damage to the switch.

⚠️ CAUTION:

Provide a circuit breaker for each power supply.

Figure 20 Installation procedure

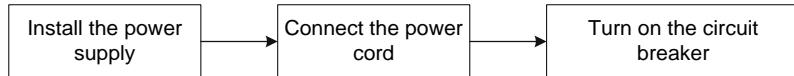
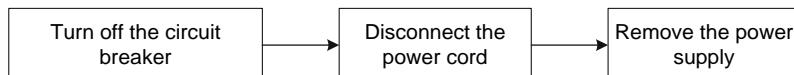


Figure 21 Removal procedure



The switch provides power supply slots and comes with power supply slot 1 empty and power supply slot 2 installed with a filler panel. You can install one or two power supplies for the switch as required.

For the power supplies available for the switch and their specifications, see "[Hot-swappable power supplies](#)."

Installing a PSR150-A1/PSR150-D1 power supply

⚠ CAUTION:

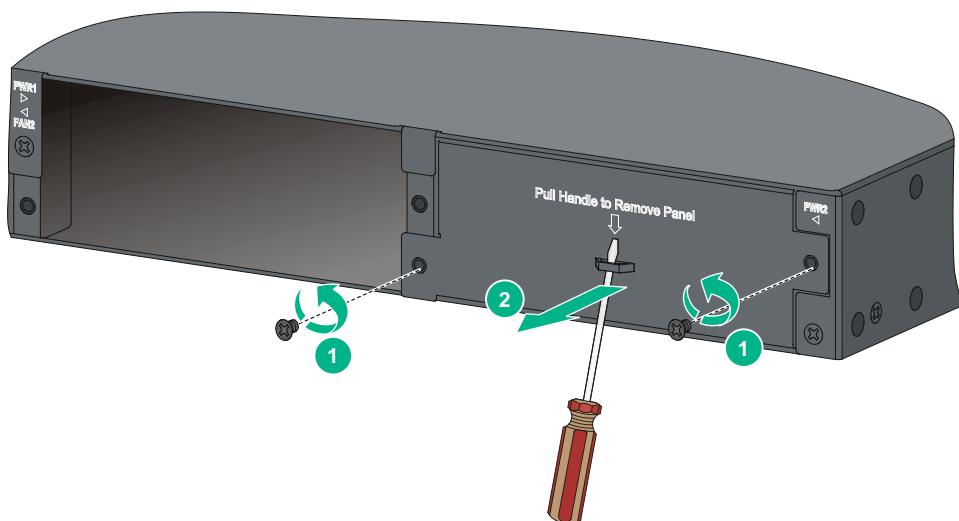
To prevent damage to the power supply or the connectors on the backplane, insert the power supply gently. If you encounter a hard resistance when inserting the power supply, pull out the power supply and insert it again.

The installation procedure is the same for PSR150-A1 and PSR150-D1 power supplies. The following procedure uses the PSR150-A1 power supply as an example.

To install a PSR150-A1 power supply:

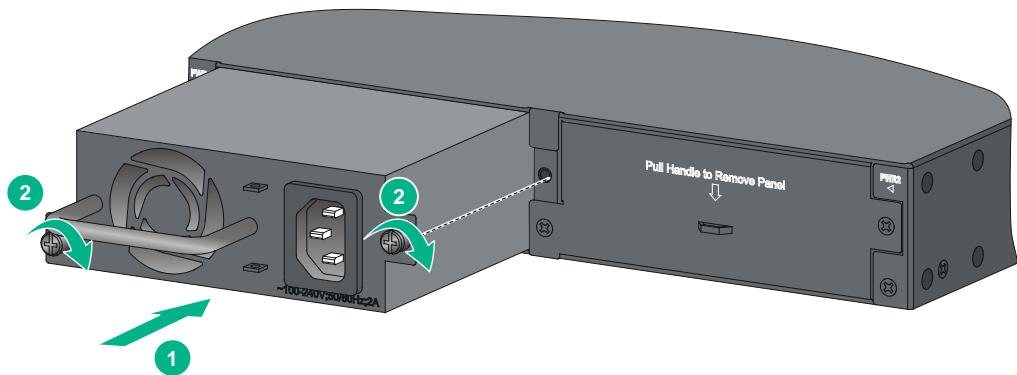
1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Remove the filler panel, if any, from the target power supply slot as follows:
 - a. Remove the screws on the filler panel.
 - b. Use a flathead screwdriver to remove the filler panel.

Figure 22 Removing the filler panel



3. Unpack the power supply and verify that the power supply model is correct.
4. Correctly orient the power supply with the power supply slot (use the letters on the power supply faceplate for orientation), grasp the handle of the power supply with one hand and support its bottom with the other, and slide the power supply slowly along the guide rails into the slot (see callout 1 in [Figure 23](#)).
5. Fasten the captive screws on the power supply with a Phillips screwdriver to secure the power supply in the chassis (see callout 2 in [Figure 23](#)). If the captive screw cannot be tightly fastened, verify the installation of the power supply.
6. Install the filler panel over the empty power supply slot to prevent dust and ensure good ventilation if you install only one power supply.

Figure 23 Installing a PSR150-A1 power supply



Removing a PSR150-A1/PSR150-D1 power supply

The removal procedure is the same for PSR150-A1 and PSR150-D1 power supplies. The following procedure uses the PSR150-A1 power supply as an example.

To remove a PSR150-A1 power supply:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Disconnect the power cord.
3. Loosen the captive screws of the power supply with a Phillips screwdriver until they are completely disengaged.
4. Grasp the handle of the power supply with one hand and pull it out a little, support the bottom with the other hand, and pull the power supply slowly along the guide rails out of the slot.
Put away the removed power supply in an antistatic bag or the power supply package bag for future use.
5. Install the filler panel to prevent dust and ensure good ventilation if no power supply is installed in the slot.

Installing a PSR720-56A/PSR1110-56A power supply



CAUTION:

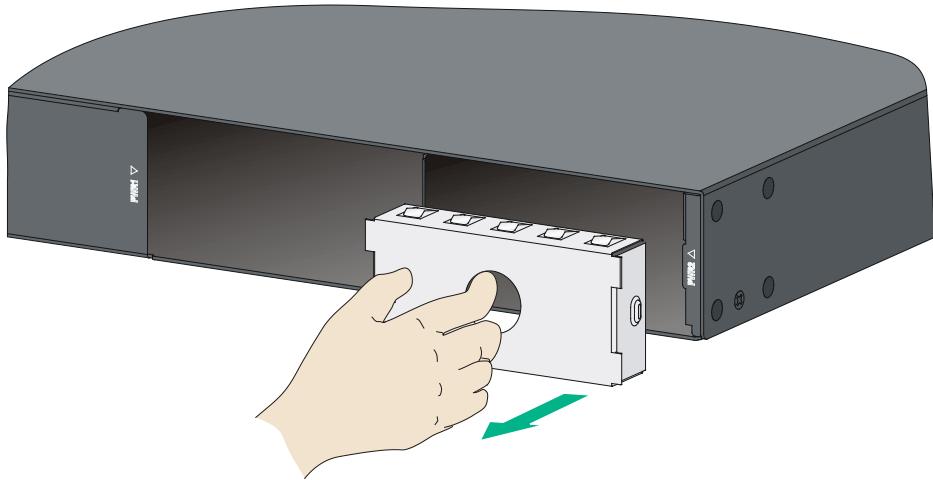
To prevent damage to the power supply or the connectors on the backplane, insert the power supply gently. If you encounter a hard resistance when inserting the power supply, pull out the power supply and insert it again.

The installation procedure is the same for the PSR720-56A and PSR1110-56A power supplies. The following procedure uses the PSR720-56A power supply as an example.

To install a PSR720-56A power supply:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Put your forefinger into the hole in the filler panel, if any, in the target power supply slot, and pull out it gently.

Figure 24 Removing the filler panel



3. Unpack the power supply and verify that the power supply model is correct.
Put away the packaging box and packaging bag of the powersupply for future use.
4. Correctly orient the power supply with the power supply slot (use the letters on the power supply faceplate for orientation), grasp the handle of the power supply with one hand and support its bottom with the other, and slide the power supply slowly along the guide rails into the slot until you hear that the latch of the power supply clicks into the slot.
When you insert the power supply into the slot, you can do that through slight inertia so that the terminals of the power supply can have a good contact with the backplane.
5. Install the filler panel over the empty power supply slot to prevent dust and ensure good ventilation if you install only one power supply.

Figure 25 Installing the power supply

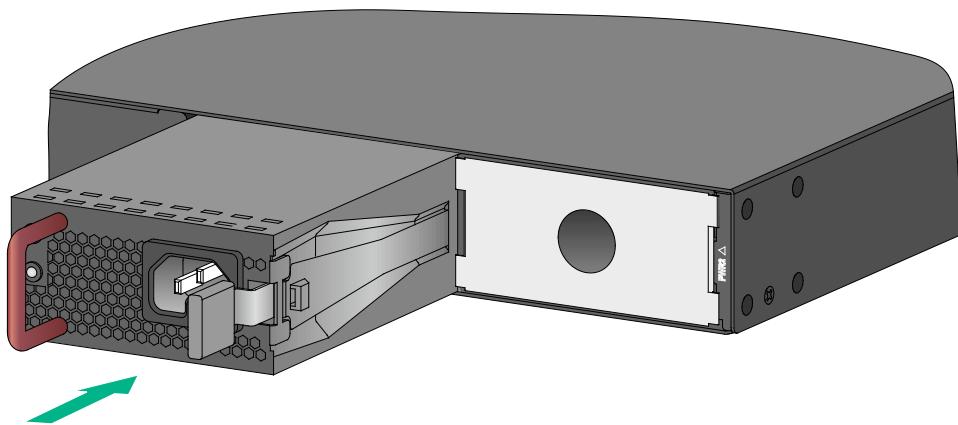
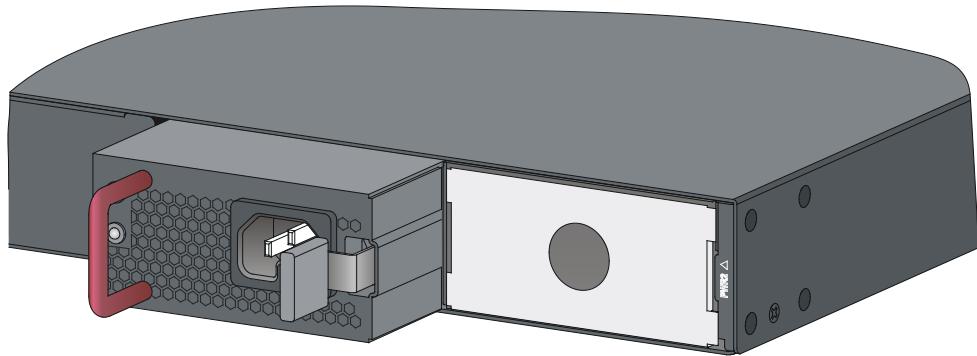


Figure 26 PSR1110-56A power supply installed in the chassis



NOTE:

The PSR1110-56A power supply adds 64 mm (2.52 in) to chassis depth, which includes the handle of the power supply.

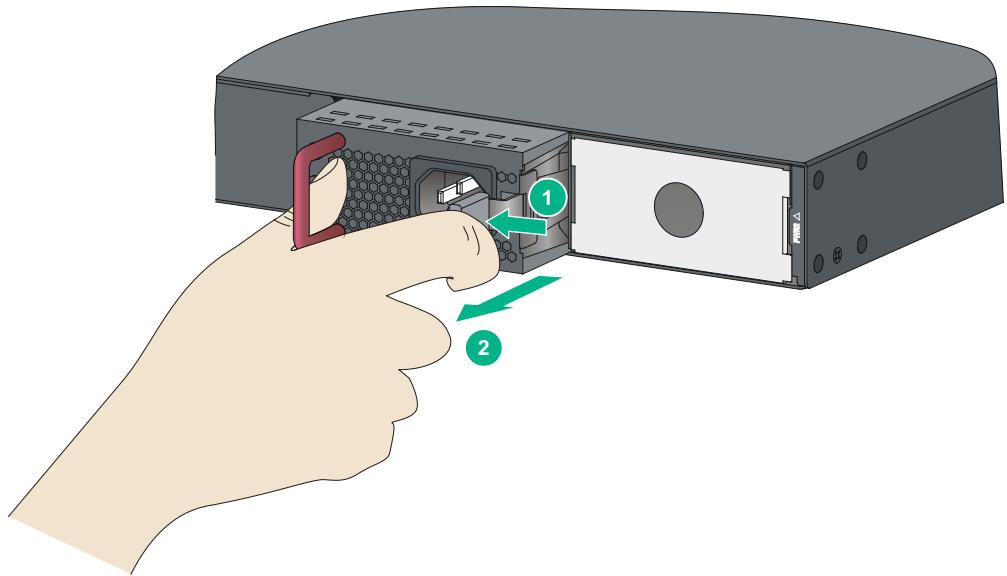
Removing a PSR720-56A/PSR1110-56A power supply

The removal procedure is the same for the PSR720-56A, and PSR1110-56A power supplies. The following procedure uses the PSR720-56A power supply as an example.

To remove a PSR720-56A power supply:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Disconnect the power cord.
3. Press the latch towards the handle, and pull the power supply along the guide rails until it is part-way out.
4. Grasp the handle of the power supply with one hand, support the bottom with the other hand, and pull the power supply slowly along the guide rails out of the slot.
Put away the removed power supply in an antistatic bag or the power supply package bag for future use.
5. Install the filler panel to prevent dust and ensure good ventilation if no power supply is installed in the slot.

Figure 27 Removing the power supply



Connecting the power cord

Table 7 Power source options and power cord connection procedures for the power supplies

Power supply	Power source option	Power cord connection procedure
PSR150-A1	AC power source	Connecting the PSR150-A1
PSR150-D1	–48 VDC power source in the equipment room	Connecting the PSR150-D1
PSR720-56A/PSR1110-56A	AC power source	Connecting the PSR720-56A/PSR1110-56A



CAUTION:

- The AC power cord provided with the PSR150-A1 power supply uses a C13 connector. The AC power cord provided with the PSR720-56A/PSR1110-56A power supply uses a high-temperature C15 connector. Do not mix them.
- Provide a circuit breaker for each power supply and make sure the circuit breaker is off before installation.

Connecting the PSR150-A1

To connect the PSR150-A1:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Connect one end of the AC power cord supplied with the power supply to the AC-input power receptacle.
3. Connect the other end of the power cord to an AC power source.

Connecting the PSR150-D1

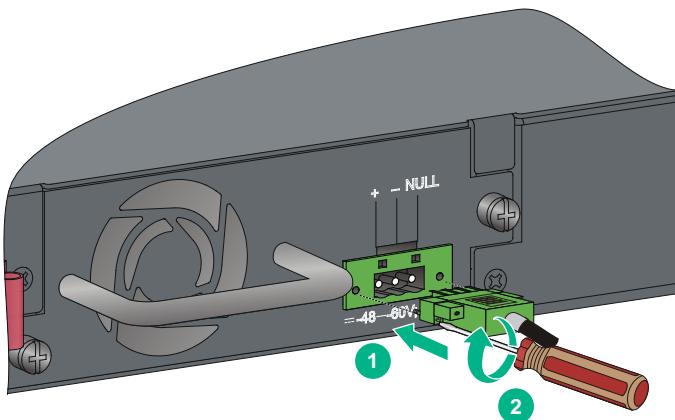
⚠ CAUTION:

- To use a -48 VDC power source for power supply, purchase an HPE recommended DC power cord yourself.
- To use an RPS for power supply, purchase a power cord compatible with the RPS yourself.
- To connect the power cord to a -48 VDC power source, identify the positive (+) and negative (-) marks on the two wires of the power cord to avoid connection mistakes.

To connect the PSR150-D1:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Use a screwdriver to remove the cover from the DC-input power receptacle.
3. Unpack the DC power cord, correctly orient the connector at one end of the cable with the DC-input power receptacle on the power supply, and insert the connector into the power receptacle (see callout 1 in [Figure 28](#)).
The power receptacle is foolproof. If you cannot insert the connector into the receptacle, re-orient the connector rather than use excessive force to push it in.
4. Tighten the screws on the connector with a flat-blade screwdriver to secure the connector in the DC-input power receptacle (see callout 2 in [Figure 28](#)).
5. Connect the two wires at the other end of the power cord to a -48 VDC power source or an RPS.

Figure 28 Connecting the PSR150-D1



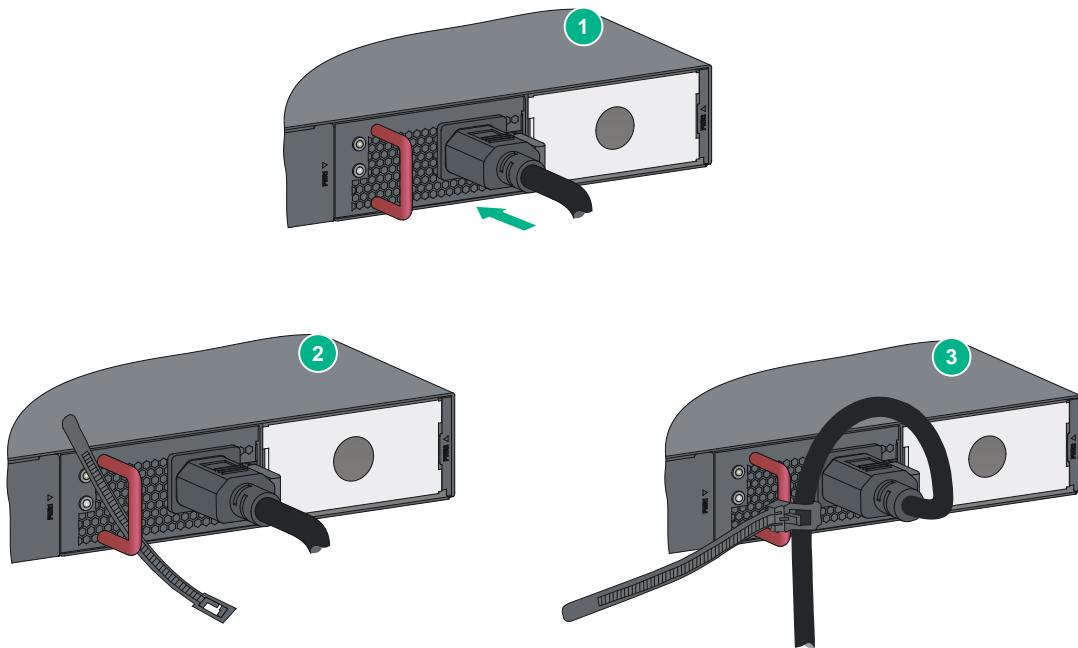
Connecting the PSR720-56A/PSR1110-56A

The power cord connection procedure is the same for the PSR720-56A and PSR1110-56A power supplies. The following procedure uses the PSR720-56A power supply as an example.

To connect the PSR720-56A:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Plug the female connector end of the AC power cord into the AC-input power receptacle of the power supply (see callout 1 in [Figure 29](#)).
3. Use a cable tie to secure the power cord to the handle of the power supply (see callout 2 and callout 3 in [Figure 29](#)).
4. Connect the other end of the AC power cord to an AC power source.

Figure 29 Connecting the PSR720-56A



Installing/removing an expansion card

⚠ CAUTION:

- Do not touch the surface-mounted components directly with your hands.
- Do not use excessive force when you install or remove an expansion card.
- Do not install or remove an expansion card on a starting switch.

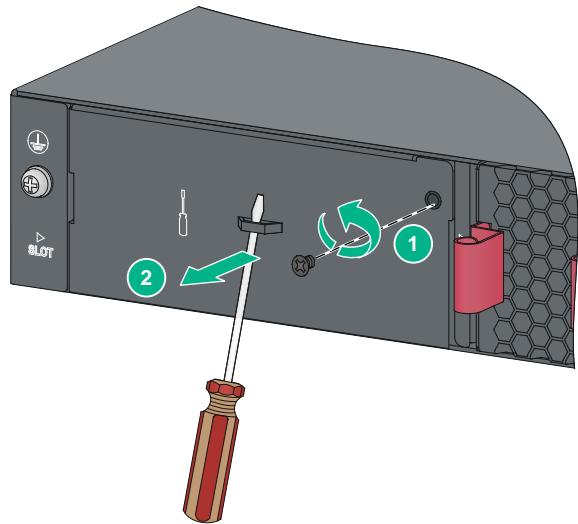
HPE 5140 HI switches each provide an expansion slot at the rear. For the expansion cards available for the switch, see "[Expansion cards](#)."

The installation and removal procedure is similar for expansion cards. The following procedure uses the LSWM2SP2PM card (with an ejector lever) as examples.

Installing an expansion card

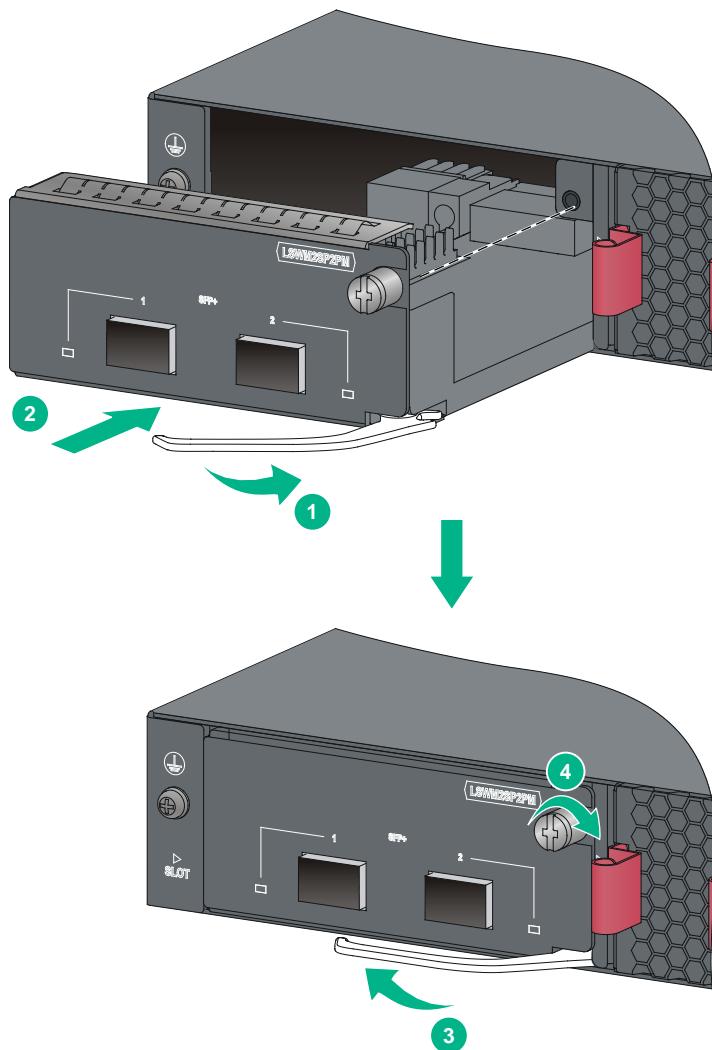
1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Use a Phillips screwdriver to remove the mounting screw on the filler panel over the expansion slot. Then remove the filler panel.
Keep the filler panel for future use.

Figure 30 Removing the filler panel over the expansion slot



3. Unpack the expansion card.
4. Rotate out the ejector lever, as shown by callout 1 in [Figure 31](#).
5. Gently push the expansion card into the slot along the guide rails until the expansion card has good contact with the chassis. See callout 2 in [Figure 31](#).
6. Rotate in the ejector lever, as shown by callout 3 in [Figure 31](#).
7. Use a Phillips screwdriver to tighten the captive screws on the expansion card to secure it in the slot. See callout 4 in [Figure 31](#).

Figure 31 Installing an expansion card (LSWM2SP2PM)



Removing an expansion card

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Use a Phillips screwdriver to remove the captive screw on the expansion card.
3. (Optional.) If the expansion card has an ejector lever, rotate out the ejector lever.
Skip this step if the expansion card does not have an ejector lever.
4. Gently pull the expansion card out of the chassis along the guide rails.
5. If you are not to install a new expansion card after removing the original one, install a filler panel in the slot to prevent dust and ensure good ventilation in the switch.

Verifying the installation

After you complete the installation, verify the following information:

- There is enough space for heat dissipation around the switch, and the rack or workbench is stable.
- The grounding cable is securely connected.

- The correct power source is used.
- The power cords are correctly connected.
- All the interface cables are cabled indoors. If any cable is routed outdoors, verify that the socket strip with lightning protection and lightning arresters for network ports have been correctly connected.

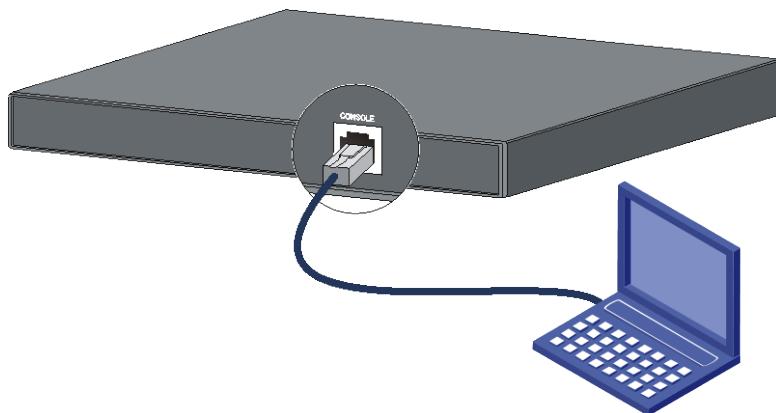
Accessing the switch for the first time

Connecting the switch to a configuration terminal

You can access and configure the switch through the serial console port or the micro USB console port. Only the micro USB console port is available if you connect both the serial console port and micro USB console port.

As a best practice, use the serial console port to access the switch. The switch is not provided with a serial console cable or a micro USB console cable. Prepare these cables yourself or purchase them from Hewlett Packard Enterprise.

Figure 32 Connecting the switch to a configuration terminal



Connecting the serial console cable

A serial console cable is an 8-core shielded cable, with a crimped RJ-45 connector at one end for connecting to the serial 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 33 Serial console cable

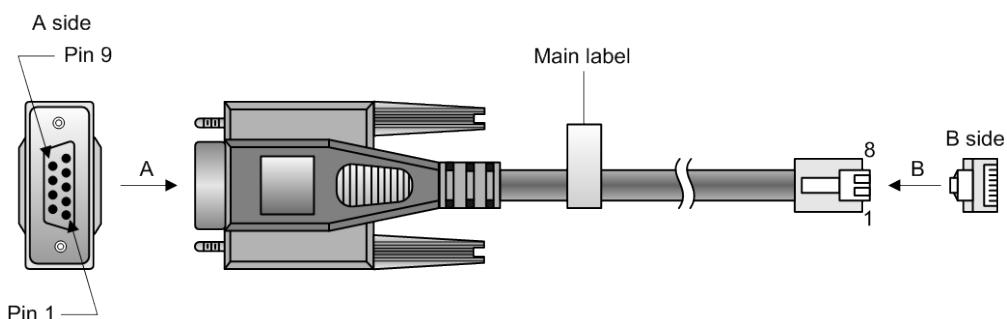


Table 8 Serial console port signaling and pinout

RJ-45	Signal	DB-9	Signal
1	RTS	8	CTS
2	DTR	6	DSR

RJ-45	Signal	DB-9	Signal
3	TXD	2	RXD
4	SG	5	SG
5	SG	5	SG
6	RXD	3	TXD
7	DSR	4	DTR
8	CTS	7	RTS

To connect to a configuration terminal (for example, a PC) through the serial console cable:

1. Plug the DB-9 female connector of the serial console cable to the serial port of the PC.
2. Connect the RJ-45 connector to the serial console port of the switch.

NOTE:

- Identify the mark on the serial console port and make sure you are connecting to the correct port.
 - The serial ports on PCs do not support hot swapping. To connect a PC to an operating switch, first connect the PC end. To disconnect a PC from an operating switch, first disconnect the switch end.
-

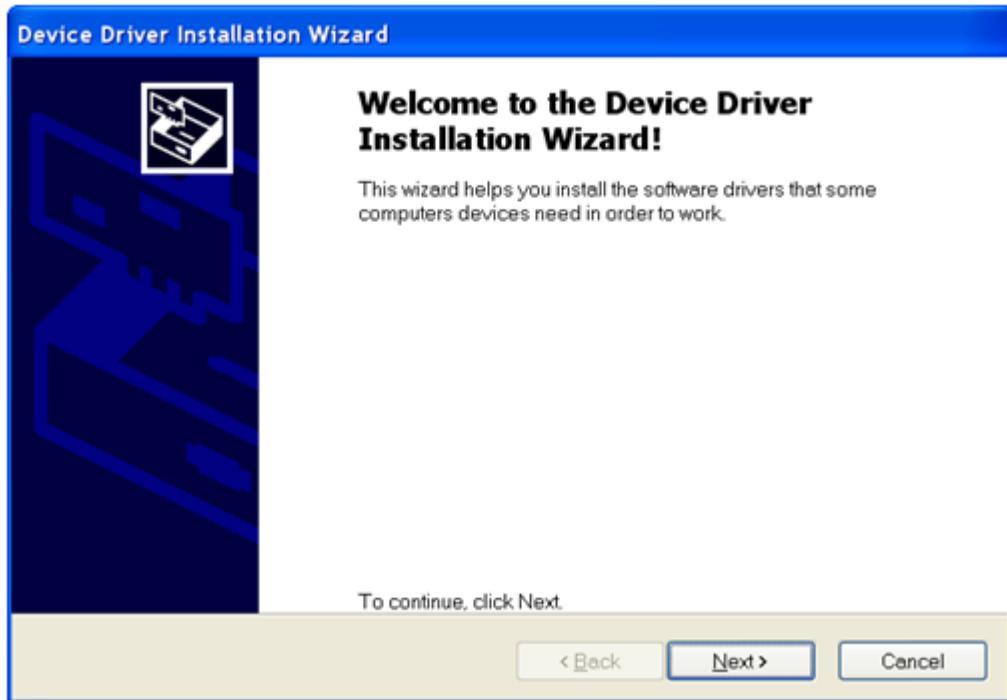
Connecting the micro USB console cable

A micro USB console cable has a micro USB Type B connector at one end to connect to the micro USB console port of the switch, and a standard USB Type A connector at the other end to connect to the USB port on the PC.

To connect to the PC through the micro USB console cable:

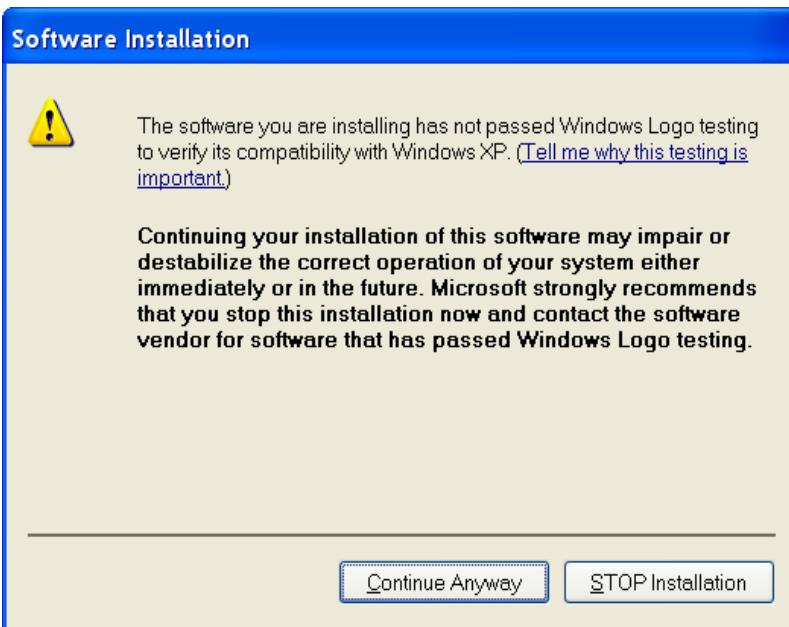
1. Connect the standard USB Type A connector to the USB port of the PC.
2. Connect the micro USB Type B connector to the micro USB console port of the switch.
3. Click the following link, or copy it to the address bar on the browser to log in to download page of the USB console driver, and download the driver.
<http://www.exar.com/connectivity/uart-and-bridging-solutions/usb-uarts/xr21v1410>
4. Select a driver program according to the operating system you use:
 - **XR21V1410_XR21B1411_Windows_Ver1840_x86_Installer.EXE**—32-bit operating system.
 - **XR21V1410_XR21B1411_Windows_Ver1840_x64_Installer.EXE**—64-bit operating system.
5. Click **Next** on the installation wizard.

Figure 34 Device Driver Installation Wizard



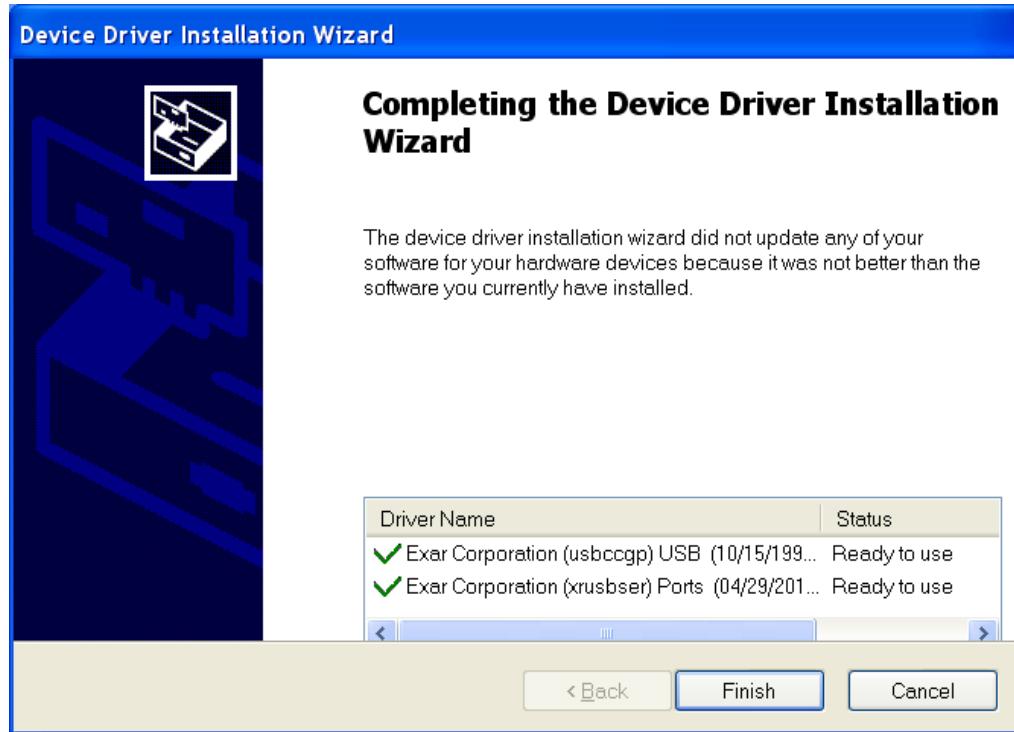
6. Click **Continue Anyway** if the following dialog box appears.

Figure 35 Software Installation



7. Click **Finish**.

Figure 36 Completing the device driver installation wizard



Setting terminal parameters

To configure and manage the switch through the console port, you must run a terminal emulator program, such as TeraTermPro, on your configuration terminal. You can use the emulator program to connect a network device, a Telnet site, or an SSH site. For more information about the terminal emulator programs, see the user guides for these programs.

Configure the terminal parameters as follows:

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

Powering on the switch

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

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

Power on the switch. During the startup process, you can access Boot ROM menus to perform tasks such as software upgrade and file management. The Boot ROM interface and menu options differ

with software versions. For more information about Boot ROM menu options, see the software-matching release notes for the device.

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

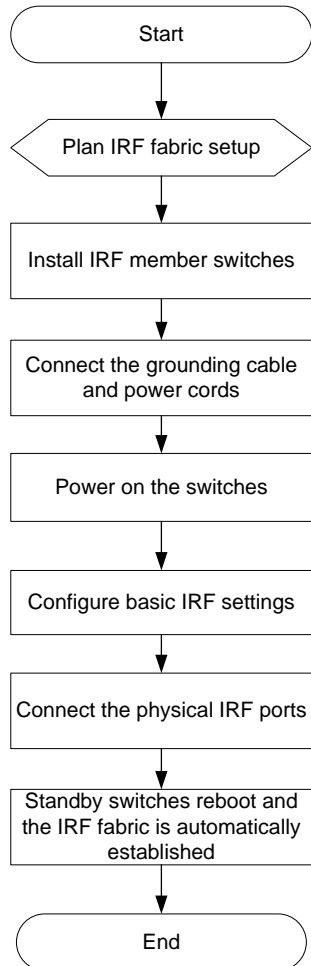
For more information about the configuration commands and CLI, see *HPE FlexNetwork 5140 HI Switch Series Configuration Guides* and *HPE 5140 HI Switch Series Command References*.

Setting up an IRF fabric

You can use IRF technology to connect and virtualize HPE 5140 HI switches into a large virtual switch called an "IRF fabric" for flattened network topology, and high availability, scalability, and manageability.

IRF fabric setup flowchart

Figure 37 IRF fabric setup flowchart



To set up an IRF fabric:

Step	Description
1. Plan IRF fabric setup	Plan the installation site and IRF fabric setup parameters: <ul style="list-style-type: none">Planning IRF fabric size and the installation siteIdentifying the master switch and planning IRF member IDsPlanning IRF topology and connectionsIdentifying physical IRF ports on the member switchesPlanning the cabling scheme

Step	Description
2. Install IRF member switches	See " Installing the switch in a 19-inch rack " or " Mounting the switch on a workbench ."
3. Connect ground wires and power cords	See " Grounding the switch " and " Connecting the power cord ."
4. Power on the switches	N/A
5. Configure basic IRF settings	See <i>HPE FlexNetwork 5140 HI Switch Series Virtual Technologies Configuration Guide</i> , depending on the software version.
6. Connect the physical IRF ports	Connect physical IRF ports on switches. All switches except the master switch automatically reboot, and the IRF fabric is established.

Planning IRF fabric setup

This section describes issues that an IRF fabric setup plan must cover.

Planning IRF fabric size and the installation site

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

Plan the installation site depending on your network solution, as follows:

- Place all IRF member switches in one rack for centralized high-density access.
- Distribute the IRF member switches in different racks to implement the ToR access solution for a data center.

NOTE:

For the maximum IRF member devices supported by the HPE 5140 HI, see the release notes that come with the switch.

Identifying the master switch and planning IRF member IDs

Determine which switch you want to use as the master for managing all member switches in the IRF fabric.

An IRF fabric has only one master switch. You configure and manage all member switches in the IRF fabric at the CLI of the master switch. 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 *HPE FlexNetwork 5140 HI Switch Series Virtual Technologies Configuration Guide*, depending on the software version.

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

Planning IRF topology and connections

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

You connect the IRF member switches through IRF ports, the logical interfaces for the connections 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 a minimum of one physical port 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.

[Figure 38](#) and [Figure 39](#) show the topologies of an IRF fabric made up of three HPE 5140 24G 4SFP+ 1-slot HI switches. The IRF port connections in the two figures are for illustration only, and more connection methods are available.

Figure 38 IRF fabric in daisy chain topology

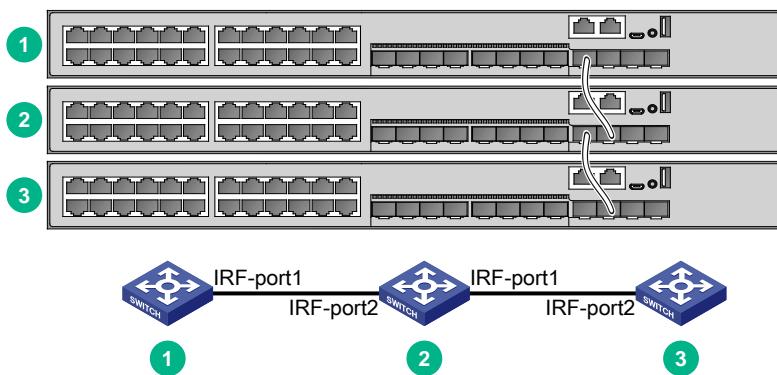
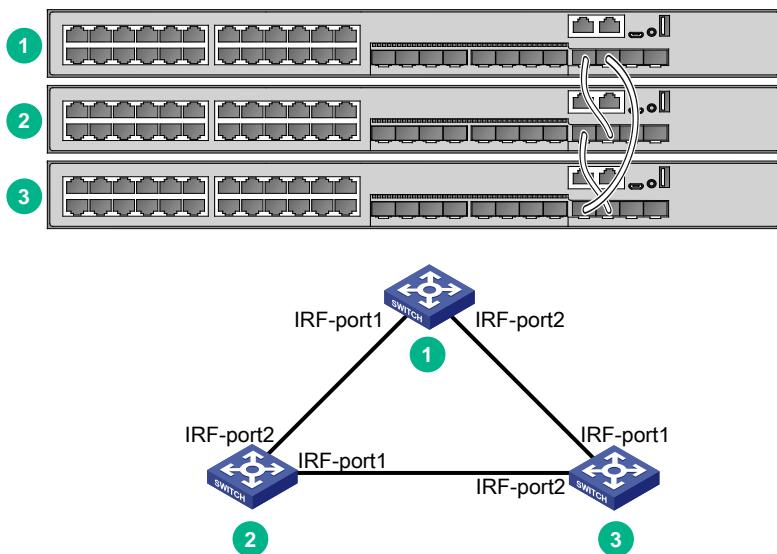


Figure 39 IRF fabric in ring topology



Identifying physical IRF ports on the member switches

Identify the physical IRF ports on the member switches according to your topology and connection scheme.

[Table 9](#) shows the physical ports that can be used for IRF connection and the port use restrictions.

Table 9 Physical IRF port requirements

Chassis	Candidate physical IRF ports	Requirements
HPE 5140 24G 4SFP+ 1-slot HI	<ul style="list-style-type: none">Four fixed SFP+ ports on the front panel	
HPE 5140 48G 4SFP+ 1-slot HI	<ul style="list-style-type: none">Ports on the interface cards on the rear panel:<ul style="list-style-type: none">1/10GBASE-T autosensing Ethernet ports10G/5G/2.5G/1000/100BASE-T autosensing Ethernet portSFP+ ports	<ul style="list-style-type: none">All physical ports to be bound to an IRF port must have the same data rate.Physical ports on interface cards and the front panel can be bound to the same IRF port.
HPE 5140 24G PoE+ 4SFP+ 1-slot HI		
HPE 5140 48G PoE+ 4SFP+ 1-slot HI		

Planning the cabling scheme

The cables available for connecting two peer IRF physical ports vary by port type:

- 1/10GBASE-T autosensing Ethernet ports**—For the available cables, see the relevant ports in "[Appendix C Ports and LEDs](#)."
- 10G/5G/2.5G/1000/100BASE-T autosensing Ethernet ports**—For the available cables, see the relevant ports in "[Appendix C Ports and LEDs](#)."
- SFP+ ports**—SFP+ transceiver modules and optical fiber or SFP+ cable. For the available transceiver modules and cables, see SFP+ port in "[Appendix C Ports and LEDs](#)."

For a long-distance IRF connection, use SFP+ transceiver modules and optical fibers.

The following subsections describe several HPE recommended IRF connection schemes. All these schemes use a ring topology.

IMPORTANT:

In these schemes, all physical IRF ports are located on the same side. If physical IRF ports are on different sides, you must measure the distance between them to select an appropriate cable.

Connecting the IRF member switches in one rack

Use twisted pair SFP+ cables to connect the IRF member switches (9 switches in this example) in a rack as shown in [Figure 40](#). The switches in the ring topology (see [Figure 41](#)) are in the same order as connected in the rack.

Figure 40 Connecting the switches in one rack

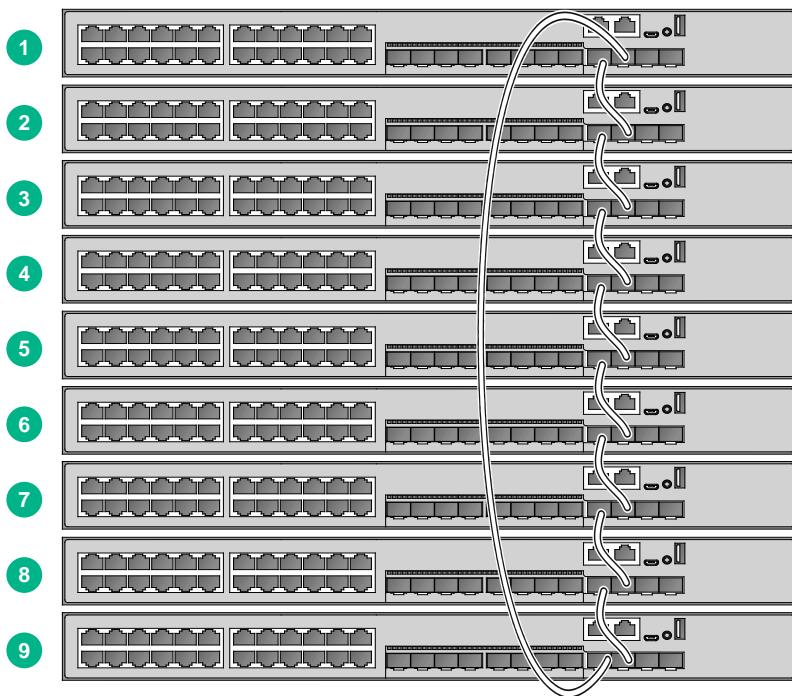
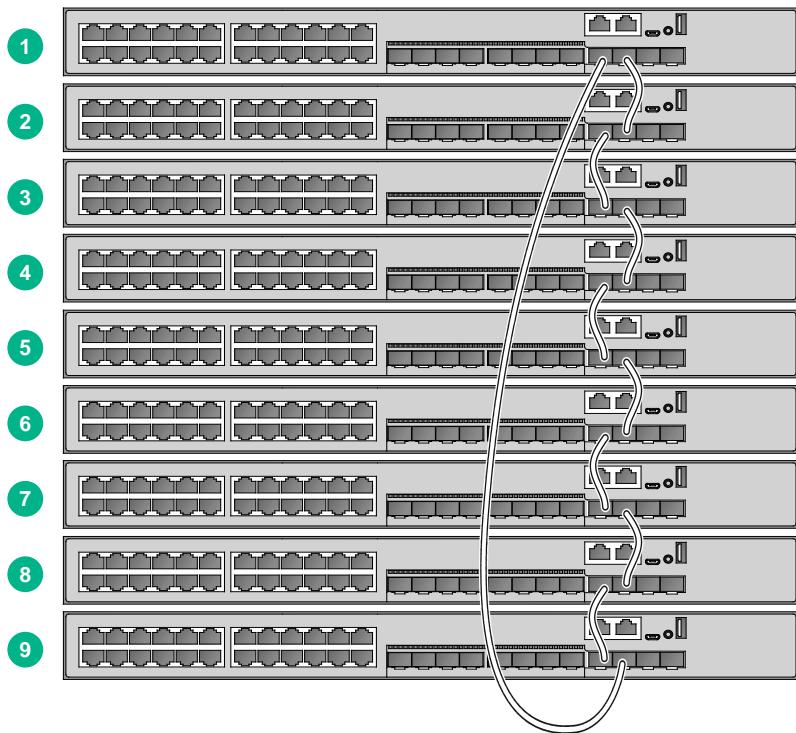
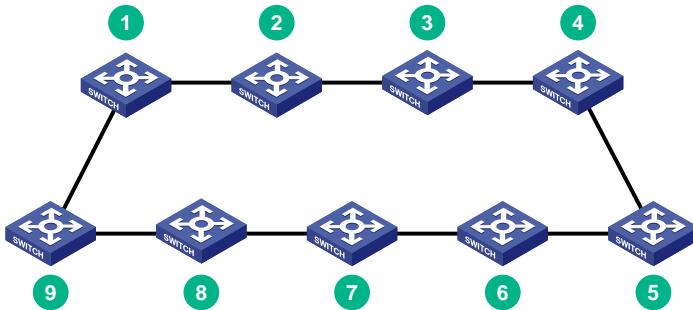


Figure 41 IRF fabric topology

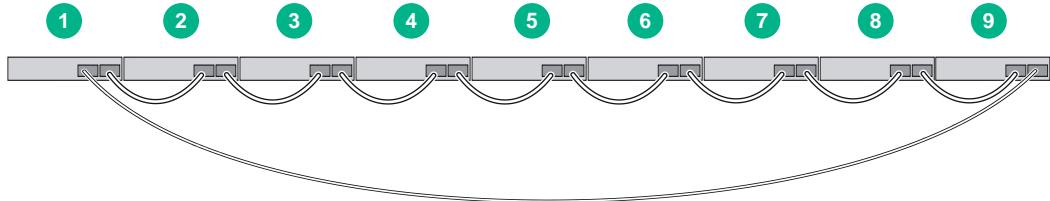


Connecting the IRF member switches in a ToR solution

You can install IRF member switches in different racks side by side to deploy a top of rack (ToR) solution.

[Figure 42](#) shows an example for connecting 9 top of rack IRF member switches by using SFP+ transceiver modules and optical fibers. The topology is the same as [Figure 41](#).

Figure 42 ToR cabling



Configuring basic IRF settings

After you install the IRF member switches, power on the switches, and log in to each IRF member switch (see *HPE FlexNetwork 5140 HI Switch Series Fundamentals Configuration Guide*) to configure their member IDs, member priorities, and IRF port bindings.

Follow these guidelines when you configure the switches:

- Assign the master switch higher member priority than any other switch.
- Bind physical ports to IRF port 1 on one switch and to IRF port 2 on the other switch. You perform IRF port binding before or after connecting IRF physical ports depending on the software release.
- To bind the ports on an interface card to an IRF port, you must install the interface card first. For how to install an interface card, see *HPE Interface Cards User Guide*.
- Execute the `display irf configuration` command to verify the basic IRF settings.

For more information about configuring basic IRF settings, see *HPE FlexNetwork 5140 HI Switch Series Virtual Technologies Configuration Guide*, depending on the software version.

Connecting the physical IRF ports

Use twisted pair/SFP+ cables, or SFP+ transceiver modules and fibers to connect the IRF member switches as planned.

Wear an ESD wrist strap when you connect twisted pair SFP+ cables or SFP+ transceiver modules and fibers. For the connection methods and precautions, see *HPE Transceiver Modules and Network Cables Installation Guide*.

Verifying the IRF fabric setup

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 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. (See *HPE FlexNetwork 5140 HI Switch Series Fundamentals Configuration Guide*.)
4. Verify that you can manage all member switches as if they were one node.
5. Display the running status of the IRF fabric by using the commands in [Table 10](#).

Table 10 Displaying and maintaining IRF configuration and running status

Task	Command
Display information about the IRF fabric.	<code>display irf</code>
Display all members' IRF configurations that take effect at a reboot.	<code>display irf configuration</code>
Display IRF fabric topology information.	<code>display irf topology</code>

NOTE:

To avoid IP address collision and network problems, configure a minimum of one multi-active detection (MAD) mechanism to detect the presence of multiple identical IRF fabrics and handle collisions. For more information about MAD detection, see *HPE FlexNetwork 5140 HI Switch Series Virtual Technologies Configuration Guide*, depending on the software version.

Maintenance and troubleshooting

Hot-swappable power supply failure

Symptom

HPE 5140 HI switches use removable power modules.

- To identify the operating status of a power module on the HPE 5140 24G 4SFP+ 1-slot HI, HPE 5140 48G 4SFP+ 1-slot HI, observe the PWR LED on the front panel of the switch. For more information about the power module status LED on the front panel of the switch, see "[Input status LED and output status LED on the power supply](#)".
- To identify the operating status of a power module on the HPE 5140 24G PoE+ 4SFP+ 1-slot HI and HPE 5140 48G PoE+ 4SFP+ 1-slot HI switches, observe the LEDs on the power module and the PWR LED on the front panel of the switch. For more information about the LEDs on a power module, see *HPE PSR720-56A Power Module User Manual*, or *HPE PSR1110-56A Power Module User Manual*.

Solution

To resolve the problem:

1. Verify that the power cord is correctly connected.
2. Verify that the power source meets the requirement.
3. Verify that the operating temperature of the switch is in an acceptable range and the power supply has good ventilation.
4. If the problem persists, contact Hewlett Packard Enterprise Support.

To replace a power supply, see "[Installing/removing a power supply](#)."

Hot-swappable fan tray failure

CAUTION:

- Do not power on the switch when the switch does not have a fan tray or has only one fan tray installed.
- If both fan trays fail, replace them within 2 minutes.
- If one fan tray fails, perform either of the following tasks:
 - If the ambient temperature is not higher than 27°C (80.6°F), replace the fan tray within 24 hours and make sure the failed fan tray remains in position before the replacement.
 - If the ambient temperature is higher than 27°C (80.6°F), replace the fan tray immediately.

The switch supports hot swapping of fan trays. When a fan tray fails, see "[Removing a fan tray](#)" and "[Installing a fan tray](#)" to replace the fan tray. If the problem persists, contact HPE Support.

Removing a fan tray

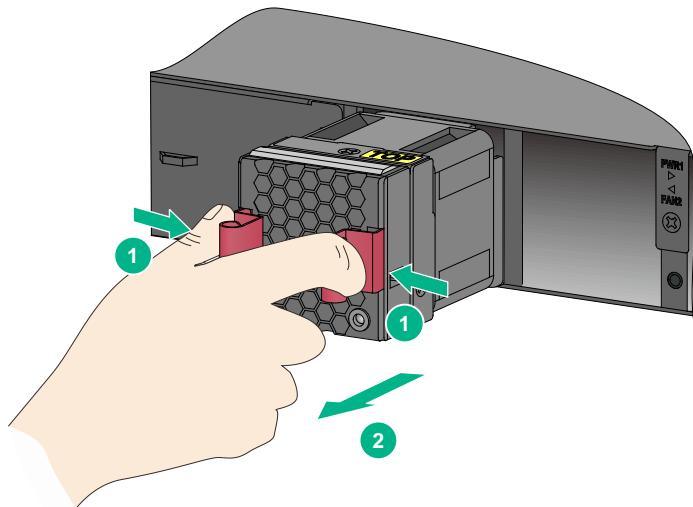
⚠️ WARNING!

- Do not touch any bare conductors or terminals on the fan tray.
- Do not place the fan tray in a moist place. Prevent liquid from entering the fan tray.
- Do not disassemble faulty fan trays yourself. When the internal wiring or components of a fan tray are faulty, ask maintenance engineers for maintenance.
- Take out the fan tray after the fans completely stop rotating. Do not touch the fans even if the fans stop rotating to avoid affecting fan balance, which might cause loud fan operating noise.

To remove a fan tray:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Grasp the two handles of the fan tray, as shown by callout 1 in [Figure 43](#), and pull out the fan tray slowly along the guide rails.
3. Put the removed fan tray in an antistatic bag.

Figure 43 Removing a fan tray



Installing a fan tray

⚠️ CAUTION:

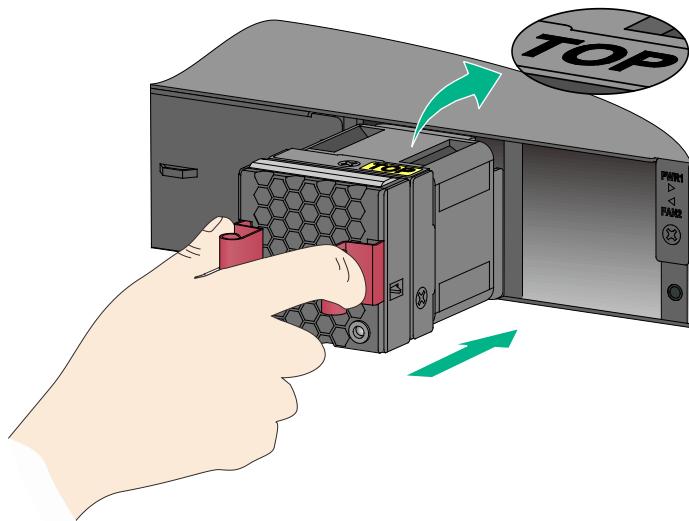
- To prevent damage to the fan tray or the connectors on the backplane, insert the fan tray gently. If you encounter a hard resistance when inserting the fan tray, pull out the fan tray and insert it again.
- Install two fan trays of the same model on the switch.
- Make sure all slots have modules or filler panels installed when the switch is operating.

To install a fan tray:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Unpack the fan tray and verify that the fan tray model is correct.

3. Grasp the two handles of the fan tray with the side marked **TOP** facing up, and slide the fan tray along the guide rails into the slot until the fan tray seats in the slot and has a firm contact with the backplane.

Figure 44 Installing a fan tray



! IMPORTANT:

- By default, the switch uses the same air flow direction as the HPE X722 port to power fan tray.
- After you install the HPE X721 power to port fan tray, use the **fan prefer-direction** command to set the switch to use the same air flow direction as the fan tray. If the switch uses a different air flow direction, the system outputs traps and logs to notify you to replace the fan tray.

Configuration terminal display problems

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

No display

Symptom

The PC displays nothing when the switch is powered on.

Solution

To resolve the problem:

1. Verify that the power supply is supplying power to the switch.
2. Verify that the console cable is correctly connected.
3. Verify that the console cable does not have any problems and the PC settings are correct.
4. If the problem persists, contact Hewlett Packard Enterprise Support.

Garbled display

Symptom

The display on the PC is garbled.

Solution

To resolve the problem:

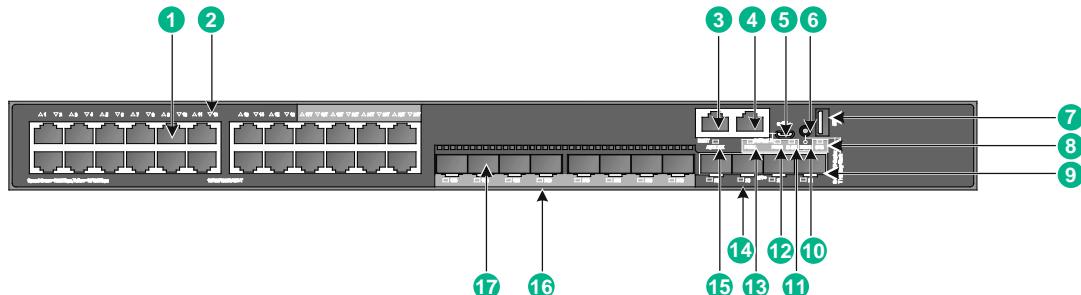
1. Verify that the following settings are configured for the terminal:
 - o **Baud rate**—9,600.
 - o **Data bits**—8.
 - o **Stop bits**—1.
 - o **Parity**—None.
 - o **Flow control**—None.
2. If the problem persists, contact Hewlett Packard Enterprise Support.

Appendix A Chassis views and technical specifications

Chassis views

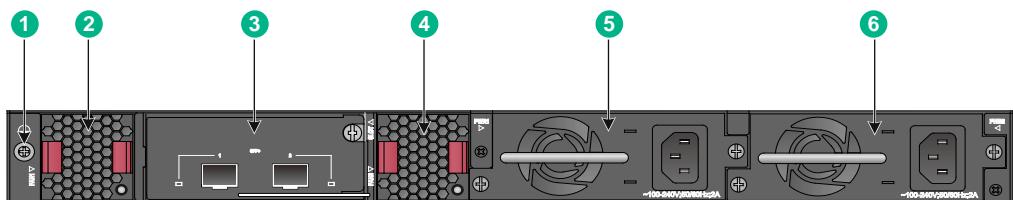
HPE 5140 24G 4SFP+ 1-slot HI

Figure 45 Front panel



- | | |
|---|---------------------------------------|
| (1) 10/100/1000BASE-T autosensing Ethernet port | |
| (2) 10/100/1000BASE-T autosensing Ethernet port LED | |
| (3) Management Ethernet port | (4) Console port (CONSOLE) |
| (5) Micro USB console port | (6) Mode button |
| (7) USB port | (8) System status LED (SYS) |
| (9) SFP+ port | (10) Mode LED (MODE) |
| (11) Expansion card status LED (SLOT) | (12) Power supply 2 status LED (PWR2) |
| (13) Power supply 1 status LED (PWR1) | (14) SFP+ port LED |
| (15) Management Ethernet port LED (ACT/LINK) | (16) SFP port LED |
| (17) SFP port | |

Figure 46 Rear panel



- | | |
|---------------------|--------------------|
| (1) Grounding screw | (2) Fan tray 1 |
| (3) Expansion card | (4) Fan tray 2 |
| (5) Power supply 1 | (6) Power supply 2 |

The HPE 5140 24G 4SFP+ 1-slot HI switch comes with power supply slot 1 empty and power supply slot 2 installed with a filler panel. You can install one or two power supplies for the switch as required. In this figure, two PSR150-A1 AC power supplies are installed in the power supply slots. For more information about installing and removing a power supply, see "[Installing/removing a power supply](#)."

The HPE 5140 24G PoE+ 4SFP+ 1-slot HI switch comes with a filler panel in the expansion slot. You can select an expansion card for the switch as required. In this figure, an LSWM2SP2PM interface card is installed in the expansion slot. For more information about installing and removing an expansion card, see "[Installing/removing an expansion card](#)."

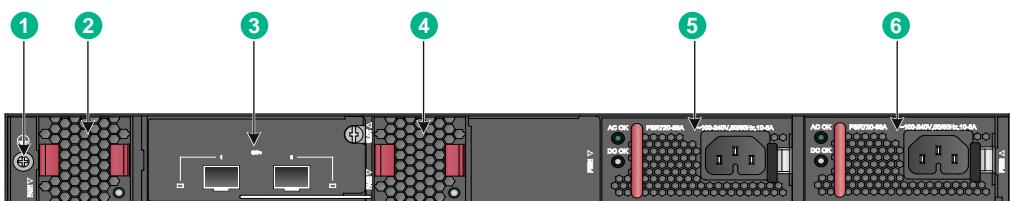
HPE 5140 24G PoE+ 4SFP+ 1-slot HI

Figure 47 Front panel



- | | |
|---|---------------------------------------|
| (1) 10/100/1000BASE-T autosensing Ethernet port | |
| (2) 10/100/1000BASE-T autosensing Ethernet port LED | |
| (3) Management Ethernet port | (4) Console port (CONSOLE) |
| (5) Micro USB console port | (6) Mode button |
| (7) USB port | (8) System status LED (SYS) |
| (9) SFP+ port | (10) Mode LED (MODE) |
| (11) Expansion card status LED (SLOT) | (12) Power supply 2 status LED (PWR2) |
| (13) Power supply 1 status LED (PWR1) | (14) SFP+ port LED |
| (15) Management Ethernet port LED (ACT/LINK) | |

Figure 48 Rear panel



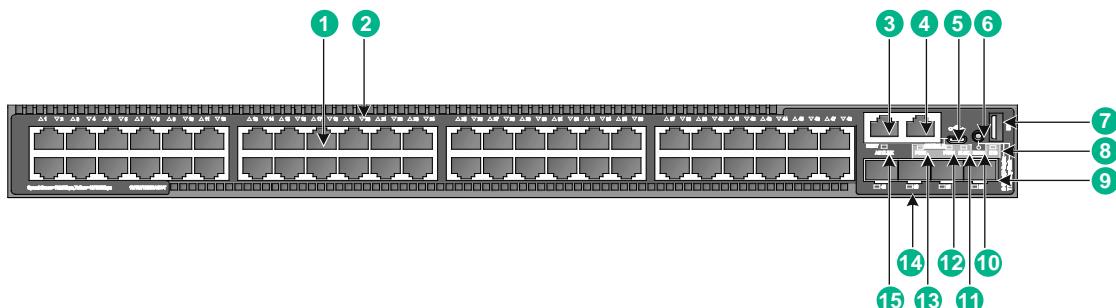
- | | |
|---------------------|--------------------|
| (1) Grounding screw | (2) Fan tray 1 |
| (3) Expansion card | (4) Fan tray 2 |
| (5) Power supply 1 | (6) Power supply 2 |

The HPE 5140 24G PoE+ 4SFP+ 1-slot HI switch comes with power supply slot 1 empty and power supply slot 2 installed with a filler panel. You can install one or two power supplies for the switch as required. In this figure, two PSR720-56A AC power supplies are installed in the power supply slots. For more information about installing and removing a power supply, see "[Installing/removing a power supply](#)."

The HPE 5140 24G PoE+ 4SFP+ 1-slot HI switch comes with a filler panel in the expansion slot. You can select an expansion card for the switch as required. In this figure, an LSWM2SP2PM interface card is installed in the expansion slot. For more information about installing and removing an expansion card, see "[Installing/removing an expansion card](#)."

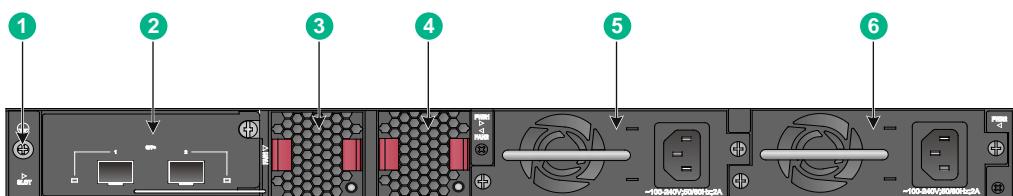
HPE 5140 48G 4SFP+ 1-slot HI

Figure 49 Front panel



- | | |
|---|---------------------------------------|
| (1) 10/100/1000BASE-T autosensing Ethernet port | |
| (2) 10/100/1000BASE-T autosensing Ethernet port LED | |
| (3) Management Ethernet port | (4) Console port (CONSOLE) |
| (5) Micro USB console port | (6) Mode button |
| (7) USB port | (8) System status LED (SYS) |
| (9) SFP+ port | (10) Mode LED (MODE) |
| (11) Expansion card status LED (SLOT) | (12) Power supply 2 status LED (PWR2) |
| (13) Power supply 1 status LED (PWR1) | (14) SFP+ port LED |
| (15) Management Ethernet port LED (ACT/LINK) | |

Figure 50 Rear panel



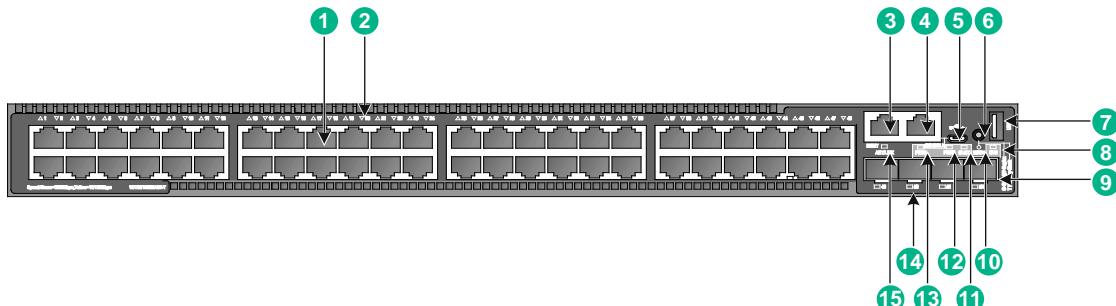
- | | |
|---------------------|--------------------|
| (1) Grounding screw | (2) Expansion card |
| (3) Fan tray 1 | (4) Fan tray 2 |
| (5) Power supply 1 | (6) Power supply 2 |

The HPE 5140 48G 4SFP+ 1-slot HI switch comes with power supply slot 1 empty and power supply slot 2 installed with a filler panel. You can install one or two power supplies for the switch as required. In this figure, two PSR150-A1 AC power supplies are installed in the power supply slots.

The HPE 5140 48G PoE+ 4SFP+ 1-slot HI switch comes with a filler panel in the expansion slot. You can select an expansion card for the switch as required. In this figure, an LSWM2SP2PM interface card is installed in the expansion slot.

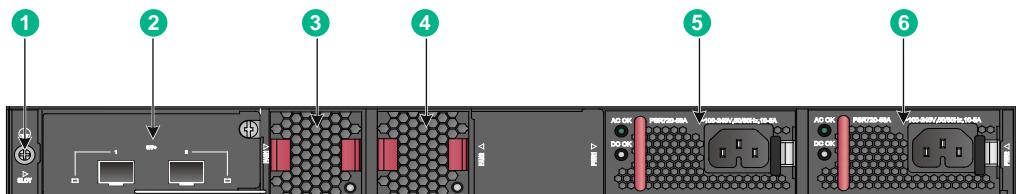
HPE 5140 48G PoE+ 4SFP+ 1-slot HI

Figure 51 Front panel



- | | |
|---|---------------------------------------|
| (1) 10/100/1000BASE-T autosensing Ethernet port | |
| (2) 10/100/1000BASE-T autosensing Ethernet port LED | |
| (3) Management Ethernet port | (4) Console port (CONSOLE) |
| (5) Micro USB console port | (6) Mode button |
| (7) USB port | (8) System status LED (SYS) |
| (9) SFP+ port | (10) Mode LED (MODE) |
| (11) Expansion card status LED (SLOT) | (12) Power supply 2 status LED (PWR2) |
| (13) Power supply 1 status LED (PWR1) | (14) SFP+ port LED |
| (15) Management Ethernet port LED (ACT/LINK) | |

Figure 52 Rear panel



- | | |
|---------------------|--------------------|
| (1) Grounding screw | (2) Expansion card |
| (3) Fan tray 1 | (4) Fan tray 2 |
| (5) Power supply 1 | (6) Power supply 2 |

The HPE 5140 48G PoE+ 4SFP+ 1-slot HI switch comes with power supply slot 1 empty and power supply slot 2 installed with a filler panel. You can install one or two power supplies for the switch as required. In this figure, two PSR720-56A AC power supplies are installed in the power supply slots.

The HPE 5140 48G PoE+ 4SFP+ 1-slot HI switch comes with a filler panel in the expansion slot. You can select an expansion card for the switch as required. In this figure, an LSWM2SP2PM interface card is installed in the expansion slot.

Technical specifications

Non-PoE switch models

Table 11 Technical specifications for non-PoE switch models (1)

Item	HPE 5140 24G 4SFP+ 1-slot HI	HPE 5140 48G 4SFP+ 1-slot HI
Dimensions (H × W × D)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)
Weight	≤ 6.7 kg (14.77 lb)	≤ 7.0 kg (15.43 lb)
Console port	<ul style="list-style-type: none"> • 1 × micro USB console port • 1 × serial console port <p>Only the micro USB console port is available when you connect both ports.</p>	
USB port	1	1
Management Ethernet port	1	1
SFP+ port	4	4
SFP port	8 (Each and its corresponding 10/100/1000BASE-T port form a combo interface.)	N/A
10/100/1000BASE-T autosensing Ethernet port	24 (The rightmost eight 10/100/1000BASE-T autosensing Ethernet ports and their corresponding SFP ports form combo interfaces.)	48
Expansion slot	1, on the rear panel	1, on the rear panel
Power supply slot	2, on the rear panel	2, on the rear panel
Fan tray slot	2, on the rear panel	2, on the rear panel
Input voltage	<ul style="list-style-type: none"> • AC input for the PSR150-A1 power supply: <ul style="list-style-type: none"> ◦ Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz ◦ Max voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz • DC input for the PSR150-D1 power supply: You can use a -48 VDC power source in the equipment room or an RPS (A-RPS800 or A-RPS1600). <ul style="list-style-type: none"> ◦ Rated voltage range: -48 VDC to -60 VDC ◦ Max voltage range: -36 VDC to -72 VDC 	
Minimum power consumption	<ul style="list-style-type: none"> • Single AC input: 24 W • Single DC input: 24 W • Dual AC inputs: 29 W • Dual DC inputs: 28 W 	<ul style="list-style-type: none"> • Single AC input: 27 W • Single DC input: 24 W • Dual AC inputs: 31 W • Dual DC inputs: 29 W
Maximum power consumption	<ul style="list-style-type: none"> • Single AC input: 87 W • Single DC input: 88 W • Dual AC inputs: 91 W • Dual DC inputs: 95 W 	<ul style="list-style-type: none"> • Single AC input: 88 W • Single DC input: 89 W • Dual AC inputs: 93 W • Dual DC inputs: 96 W
Chassis leakage current compliance	UL 62368-1/EN 62368-1/IEC 62368-1/UL 60950-1/EN 60950-1/IEC 60950-1/GB4943.1	
Melting current of power supply fuse	<ul style="list-style-type: none"> • PSR150-A1 power supply: 5 A, 250 V • PSR150-D1 power supply: 8 A, 250 V 	

Item	HPE 5140 24G 4SFP+ 1-slot HI	HPE 5140 48G 4SFP+ 1-slot HI
Operating temperature	-5°C to 45°C (23°F to 113°F)	
Humidity	5% RH to 95% RH, noncondensing	
Fire resistance compliance	UL 62368-1/EN 62368-1/IEC 62368-1/UL 60950-1/EN 60950-1/IEC 60950-1/GB4943.1	

PoE switch models

Table 12 Technical specifications for PoE switch models

Item	HPE 5140 24G PoE+ 4SFP+ 1-slot HI	HPE 5140 48G PoE+ 4SFP+ 1-slot HI
Dimensions (H × W × D)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)
Weight	≤ 9.2 kg (20.28 lb)	≤ 9.6 kg (21.16 lb)
Console port	<ul style="list-style-type: none"> • 1 × micro USB console port • 1 × serial console port <p>Only the micro USB console port is available when you connect both ports.</p>	
USB port	1	1
Management Ethernet port	1	1
SFP+ port	4	4
10/100/1000BASE-T autosensing Ethernet port	24	48
Expansion slot	1, on the rear panel	1, on the rear panel
Power supply slot	2, on the rear panel	2, on the rear panel
Fan tray slot	2, on the rear panel	2, on the rear panel
Input voltage	<ul style="list-style-type: none"> • AC input for the PSR720-56A power supply: <ul style="list-style-type: none"> ◦ Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz ◦ Max voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz • AC input for the PSR1110-56A power supply: <ul style="list-style-type: none"> ◦ Rated voltage range: 115 VAC to 240 VAC @ 50 Hz or 60 Hz ◦ Max voltage range: 102.5 VAC to 264 VAC @ 47 Hz to 63 Hz 	
PoE power capacity	Depends on the power supply configurations. For more information, see Table 13 .	
Minimum power consumption	<ul style="list-style-type: none"> • Single AC input: 31 W • Dual AC inputs: 31 W 	<ul style="list-style-type: none"> • Single AC input: 33 W • Dual AC inputs: 40 W
Maximum power consumption (including PoE power consumption)	<ul style="list-style-type: none"> • Single AC input: 926 W • Dual AC inputs: 928 W 	<ul style="list-style-type: none"> • Single AC input: 1090 W • Dual AC inputs: 1742 W
Chassis leakage current compliance	UL 62368-1/EN 62368-1/IEC 62368-1/UL 60950-1/EN 60950-1/IEC 60950-1/GB4943.1	
Melting current of power supply fuse	15 A, 250 V	

Item	HPE 5140 24G PoE+ 4SFP+ 1-slot HI	HPE 5140 48G PoE+ 4SFP+ 1-slot HI
Operating temperature	-5°C to 45°C (23°F to 113°F)	
Humidity	5% RH to 95% RH, noncondensing	
Fire resistance compliance	UL 62368-1/EN 62368-1/IEC 62368-1/UL 60950-1/EN 60950-1/IEC 60950-1/GB4943.1	

Table 13 PoE power capacity of the HPE 5140 24G PoE+ 4SFP+ 1-slot HI and HPE 5140 48G PoE+ 4SFP+ 1-slot HI switches

Power supply configuration	HPE 5140 24G PoE+ 4SFP+ 1-slot HI		HPE 5140 48G PoE+ 4SFP+ 1-slot HI	
	Total PoE power capacity	Max PoE power capacity per port	Total PoE power capacity	Max PoE power capacity per port
2 × PSR1110-56A	810 W	30 W	1680 W	30 W
1 × PSR1110-56A and 1 × PSR720-56A	810 W	30 W	1560 W	30 W
2 × PSR720-56A	810 W	30 W	1200 W	30 W
1 × PSR1110-56A	810 W	30 W	810 W	30 W
1 × PSR720-56A	450 W	30 W	450 W	30 W

Appendix B FRUs and compatibility matrixes

Table 14 FRUs and compatibility matrixes

FRUs	HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI	HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI
Removable power supplies		
PSR150-A1	Supported	Not supported
PSR150-D1	Supported	Not supported
PSR720-56A	Not supported	Supported
PSR1110-56A	Not supported	Supported
Expansion cards		
LSWM2SP2PM	Supported	Supported
LSWM2XGT2PM	Supported	Supported
LSWM2XMGT2PM	Supported	Supported

The power supplies support asset management. You can use the `display device manuinfo` command to view the name, sequence number, and vendor of the power supplies you have installed on the device.

You can install one power supply, or two power supplies for redundancy on the HPE 5140 24G 4SFP+ 1-slot HI and HPE 5140 48G 4SFP+ 1-slot HI switches. These switches support mix of an AC power supply and a DC power supply.

You can install one power supply, or two power supplies for redundancy on the HPE 5140 24G PoE+ 4SFP+ 1-slot HI and HPE 5140 48G PoE+ 4SFP+ 1-slot HI switches. The PoE capabilities of these switches vary by power supply configuration. For more information, see [Table 12](#).

Hot-swappable power supplies

The switch provides power supply slots and support hot swapping of power supplies. Select power supplies for the switches as required.

Table 15 Removable power supplies

Power supply	Specifications	Reference
PSR150-A1 (JD362B)	<ul style="list-style-type: none">Rated input voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 HzMax input voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 HzMax output power: 150 W	<i>HPE PSR150-A & PSR150-D Power Supplies User Guide</i>
PSR150-D1 (D366B)	<ul style="list-style-type: none">Rated input voltage range: -48 VDC to -60 VDCMax input voltage range: -36 VDC to -72 VDCMax output power: 150 W	
PSR720-56A	<ul style="list-style-type: none">Rated input voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz	<i>HPE PSR720-56A Power</i>

Power supply	Specifications	Reference
(JG544A)	<ul style="list-style-type: none"> Max input voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz Max output power: 720 W 	<i>Supply User Guide</i>
PSR1110-56A (JG545A)	<ul style="list-style-type: none"> Rated input voltage range: 115 VAC to 240 VAC @ 50 Hz or 60 Hz Max input voltage range: 102.5 VAC to 264 VAC @ 47 Hz to 63 Hz Max output power: 1110 W 	<i>HPE PSR1110-56A Power Supply User Guide</i>

NOTE:

The PSR1110-56A power supply adds 64 mm (2.52 in) to the total depth of the switch, which includes the power supply handle.

Expansion cards

HPE 5140 HI switches each provide an expansion slot at the rear. Select expansion cards for the switches as required.

Table 16 Expansion cards

Item	Specifications
LSWM2SP2PM	
Description	2-port 10GE SFP+ interface card
Port type and quantity	2 × 1/10 Gbps SFP+ fiber ports
Available transceiver modules and cables	See Table 24 , Table 25 , and Table 26 .
Reference	<i>HPE LSWM2SP2PM Interface Card (JH157A) User Guide</i>
LSWM2XGT2PM	
Description	2-port 1/10GBASE-T interface card
Port type and quantity	2 × 1/10GBASE-T Ethernet ports
Available cables	See Table 19 .
Reference	<i>HPE LSWM2XGT2PM Interface Card (JH156A) User Guide</i>
LSWM2XMGT2PM	
Description	2-port 10G/5G/2.5G/1000/100BASE-T interface card
Port type and quantity	2 × 10G/5G/2.5G/1000/100BASE-T autosensing Ethernet ports
Available cables	See Table 19 and Table 20
Reference	<i>HPE LSWM2XMGT2PM Interface Card (R9L65A) User Guide</i>

For more information about these expansion cards, see user manuals for the expansion cards.

NOTE:

The ports on an LSWM2SP2PM or LSWM2XGT2PM interface card can operate only at 10 Gbps when the interface card is installed on the device.

Connecting cables to the copper ports on the interface cards

The LSWM2XGT2PM interface card provides copper ports. To connect cables to the copper ports on the LSWM2XGT2PM interface card, follow these guidelines:

- Use Category-6A or above cables and connectors. The max transmission distance varies by cable type:
 - **Category-6 UTP**—55 m (180.45 ft).
 - **Category-6 STP**—100 m (328.084 ft), no interference.
 - **Category-6 SFTP**—100 m (328.084 ft).
 - **Category-6A and above twisted pair**—100 m (328.084 ft).
- Do not bundle cables in their first 20 m (65.62 ft).
- Separate power cords and twisted pair cables at and around the distribution frame.
- For ports adjacent to one another on the device, the peer ports on the distribution frame is preferably not adjacent, for example:
 - If the device connects to one distribution frame, connect port 1 on the device to port 1 on the distribution frame and port 2 on the device to port 3 on the distribution frame.
 - If the device connects to two distribution frames, connect port 1 on the device to port 1 on distribution frame 1 and port 2 on the device to port 1 on distribution frame 2.
- Keep the device and twisted pair cables away from the interference source, such as a two-way radio and a high-power variable-frequency drive.

Appendix C Ports and LEDs

Ports

Console port

The switch has two console ports: a serial console port and a micro USB console port.

Table 17 Console port specifications

Item	Serial console port	Micro USB console port
Connector type	RJ-45	Micro USB Type B
Compliant standard	EIA/TIA-232	USB 2.0
Transmission baud rate	9600 bps (default) to 115200 bps	
Services	<ul style="list-style-type: none">Provides connection to an ASCII terminal.Provides connection to the serial port of a local PC running terminal emulation program.	Provides connection to the USB port of a local PC running terminal emulation program.

Management Ethernet port

The switch provides a management Ethernet port on the front panel. You can connect this port to a PC or management station for loading and debugging software or remote management.

Table 18 Management Ethernet port specifications

Item	Specification
Connector type	RJ-45
Connector quantity	1
Port transmission rate	10/100/1000 Mbps, half/full duplex
Transmission medium and max transmission distance	100 m (328.08 ft) over category-5 twisted pair cable
Functions and services	Switch software and Boot ROM upgrade, network management

USB port

The switch has one OHC-compliant USB2.0 port that can upload and download data at a rate up to 480 Mbps. You can use this USB port to access the file system on the flash of the switch, for example, to upload or download application and configuration files.

NOTE:

USB devices from different vendors vary in compatibilities and drivers. Hewlett Packard Enterprise does not guarantee the correct operation of USB devices from all vendors on the switch. If a USB device fails to operate on the switch, replace it with one from another vendor.

1/10BASE-T autosensing Ethernet port

The LSWM2XGT2PM interface card provides 1/10BASE-T autosensing Ethernet ports.

Table 19 1/10BASE-T autosensing Ethernet port specifications

Item	Specification
Connector type	RJ-45
Interface attributes	1/10 Gbps, full duplex, MDI/MDI-X auto-sensing
Max transmission distance	<ul style="list-style-type: none">• Category-6 UTP—55 m (180.45 ft)• Category-6 STP—100 m (328.08 ft)• Category-6 SFTP—100 m (328.08 ft)• Category-6 and above twisted pair—100 m (328.08 ft)
Transmission medium	Category-6 (or above) twisted pair cable
Standards	IEEE 802.3an, 802.3ab

10/100/1000BASE-T autosensing Ethernet port

All the HPE 5140 HI switch models provide 10/100/1000BASE-T autosensing Ethernet ports.

Table 20 10/100/1000BASE-T autosensing Ethernet port specifications

Item	Specification
Connector type	RJ-45
Interface attributes	<ul style="list-style-type: none">• 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

10G/5G/2.5G/1000/100BASE-T autosensing Ethernet port

The LSWM2XMGT2PM interface card provides 10G/5G/2.5G/1000/100BASE-T autosensing Ethernet ports.

Table 21 10G/5G/2.5G/1000/100BASE-T autosensing Ethernet port specifications

Item	Specification
Connector type	RJ-45
Interface attributes	<ul style="list-style-type: none">• 10 Gbps, full duplex.• 5 Gbps, full duplex.• 2.5 Gbps, full duplex.• 1 Gbps, full duplex.• 100 Mbps, half/full duplex.• MDI/MDI-X autosensing.

Item	Specification
Max transmission distance	<ul style="list-style-type: none"> • 10G mode: 100 m (328.08 ft) over Category-6 shielded foil twisted pair (S/FTP) or above twisted pair • 10G mode: 55 m (180.45 ft) over Category-6 unshielded twisted pair (UTP) or Category-5e twisted pair • 5G mode: 100 m (328.08 ft) over Category-5e or above twisted pair • 2.5G mode: 200 m (656.17 ft) over Category-5e or above twisted pair • 1G mode: 140 m (459.32 ft) over Category-5e or above twisted pair • 100M mode: 140 m (459.32 ft) over Category-5e or above twisted pair <p>NOTE: The data is for reference only. The actual maximum transmission distance varies by the capabilities of the peer device and the twisted pair quality.</p>
Transmission medium	<ul style="list-style-type: none"> • 10G mode: Category-6 or above twisted pair cable • 5G/2.5G/1G/100M mode: Category-5e or above twisted pair cable
Standards	<ul style="list-style-type: none"> • IEEE 802.3an • IEEE 802.3ab

SFP port

The HPE 5140 24G 4SFP+ 1-slot HI switches provide 8 and 24 fixed SFP ports on the front panel, respectively.

You can install the FE SFP modules in [Table 22](#) and GE SFP transceiver modules and cables in [Table 23](#) in the SFP ports.

Table 22 100 Mbps SFP transceiver modules available for the SFP ports

Product code	HPE description	Central wavelength (nm)	Connector	Fiber diameter (μm)	Max transmission distance
JD102B	HPE X115 100M SFP LC FX Transceiver	1310	LC	Multi-mode, 50/125	2 km (1.24 miles)
				Multi-mode, 62.5/125	
JD120B	HPE X110 100M SFP LC LX Transceiver	1310	LC	Single-mode, 9/125	15 km (9.32 miles)
JD100A	HPE X110 100M SFP LC BX 10-U Transceiver	TX: 1310 RX: 1550	LC	Single-mode, 9/125	15 km (9.32 miles)
JD101A	HPE X110 100M SFP LC BX 10-D Transceiver	TX: 1550nm RX: 1310 nm	LC		

Note: JD100A and JD101A must be used in pairs.

NOTE:

- As a best practice, use HPE SFP transceiver modules and cables for the SFP ports.
- The HPE SFP transceiver modules and cables available for the SFP ports are subject to change over time. For the most up-to-date list of HPE SFP transceiver modules and cables available for the SFP ports, contact your HPE sales representative or technical support engineer.
- For the specifications of the HPE SFP transceiver modules and cables, see *HPE Transceiver Modules User Guide*.

Table 23 1000 Mbps SFP transceiver modules available for the SFP+ ports

Product code	HPE description	Central wavelength (nm)	Connector	Fiber diameter (μm)	Modal bandwidth (MHz \times km)	Max transmission distance
JD089B	HP X120 1G SFP RJ45 T Transceiver	N/A	RJ45	Category-5 twisted pair	N/A	100 m (328.08 ft)
JD118B	HP X120 1G SFP LC SX Transceiver	850	LC	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	LC	9/125	N/A	10 km (6.21 miles)
				50/125	500	550 m (1804.46 ft)
					400	
				62.5/125	500	550 m (1804.46 ft)
JD098B	HP X120 1G SFP LC BX 10-U Transceiver	TX: 1310 RX: 1490	LC	9/125	N/A	10 km (6.21 miles)
JD099B	HP X120 1G SFP LC BX 10-D Transceiver	TX: 1490 RX: 1310	LC	9/125	N/A	10 km (6.21 miles)
JD103A	HP X120 1G SFP LC LH100 Transceiver	1550	LC	9/125	N/A	100 km (62.14 miles)
Note: JD098B and JD099B must be used in pairs.						

! IMPORTANT:

- To install multiple HP X120 1G SFP LC LH100 transceiver modules on the HPE 5140 24G 4SFP+ 1-slot HI switches, separate these transceiver modules by other types of transceiver modules. For example, you can install SFP-GE-LH100-SM1550 transceiver modules in ports 1 and 2, other types of transceiver modules in ports 3 and 4, and SFP-GE-LH100-SM1550 transceiver modules in ports 5 and 6.

NOTE:

- As a best practice, use HPE SFP/SFP+ transceiver modules or SFP+ cables for the SFP+ ports.
 - The HPE SFP/SFP+ transceiver modules and SFP+ cables available for the SFP+ ports are subject to change over time. For the most up-to-date list of HPE SFP/SFP+ transceiver modules and SFP+ cables available for the SFP+ ports, contact your HPE sales representative or technical support engineer.
 - For the specifications for the HPE SFP/SFP+ transceiver modules and SFP+ cables, see *HPE Transceiver Modules User Guide*.
-

SFP+ port

The switch provides four fixed SFP+ ports on the front panel. To connect peer SFP+ ports over a long distance, use SFP/SFP+ transceiver modules and fibers. To connect peer SFP+ ports over a short distance, use SFP/SFP+ cables. You can install the GE SFP transceiver module and cables in [Table 23](#), 10-GE SFP+ transceiver modules in [Table 24](#), and 10-GE SFP+ cables in [Table 25](#) in the SFP+ ports.

Table 24 10-GE SFP+ transceiver modules available for the SFP+ ports

Product code	HPE description	Central wavelength (nm)	Connect or	Fiber diameter (μm)	Modal bandwidth (MHz × km)	Max transmission distance
JD092B	HP X130 10G SFP+ LC SR Transceiver	850	LC	Multi-mode, 50/125	2000	300 m (984.25 ft)
					500	82 m (269.03 ft)
					400	66 m (216.54 ft)
				Multi-mode, 62.5/125	200	33 m (108.27 ft)
					160	26 m (85.30 ft)
JD094B	HP X130 10G SFP+ LC LR Transceiver	1310	LC	Single-mode, 9/125	N/A	10 km (6.21 miles)
JL740A	HPE X130 10G SFP+ LC BiDi 40km-Downlink Transceiver	TX: 1330 RX: 1270	LC	Single-mode, 9/125	N/A	40 km (24.86 miles)
JL739A	HPE X130 10G SFP+ LC BiDi 40km-Uplink Transceiver	TX: 1270 RX: 1330	LC	Single-mode, 9/125	N/A	40 km (24.86 miles)
JG234A	HPE X130 10G SFP+ LC ER 40km Transceiver	1550	LC	Single-mode, 9/125	N/A	40 km (24.86 miles)
JG915A	HPE X130 10G SFP+ LC LH 80km Transceiver	1550	LC	Single-mode, 9/125	N/A	80 km (49.71 miles)
JL737A	HPE X130	TX: 1270	LC	Single-mode	N/A	10 km (6.21

Product code	HPE description	Central wavelength (nm)	Connector	Fiber diameter (μm)	Modal bandwidth (MHz \times km)	Max transmission distance
	10G SFP+ LC BiDi 10km-Uplink Transceiver	RX: 1330		e, 9/125		miles)
JL738A	HPE X130 10G SFP+ LC BiDi 10km-Downlink Transceiver	TX: 1330 RX: 1270	LC	Single-mode e, 9/125	N/A	10 km (6.21 miles)

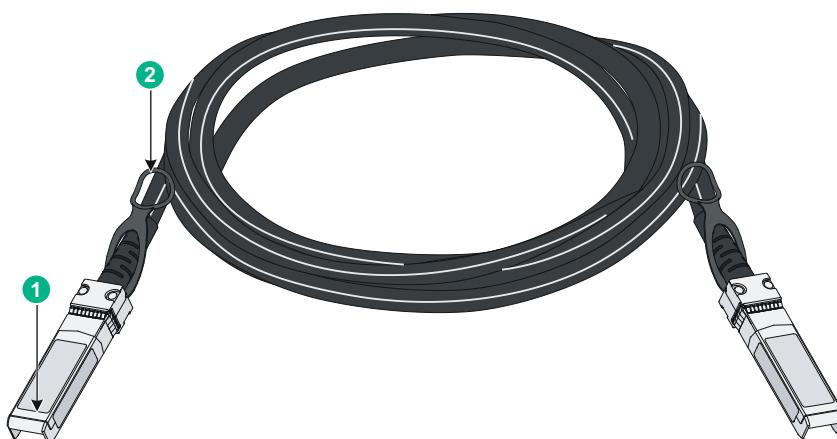
Table 25 10-GE SFP+ cables available for the SFP+ ports

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

Table 26 SFP+ fiber cables available for the SFP+ ports

Product code	HPE description	Cable length
JL290A	HPE X2A0 10G SFP+ 7m AOC Cable	7 m (22.97 ft)
JL291A	HPE X2A0 10G SFP+ 10m AOC Cable	10 m (32.81 ft)
JL292A	HPE X2A0 10G SFP+ 20m AOC Cable	20 m (65.62 ft)

Figure 53 SFP+ cable



(1) Connector

(2) Pull latch

NOTE:

- As a best practice, use HPE transceiver modules and cables for the switch.
 - The HPE transceiver modules and cables are subject to change over time. For the most recent list of HPE transceiver modules and cables, contact your Hewlett Packard Enterprise Support or marketing staff.
 - For more information about HPE transceiver modules and cables, see *HPE Transceiver Modules User Guide*.
-

Combo interface

The HPE 5140 24G 4SFP+ 1-slot HI provide eight combo interfaces. A combo interface contains an SFP port and a 10/100/1000BASE-T autosensing Ethernet port. Only one of these two ports can operate at a time.

LEDs

System status LED

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

Table 27 System status LED description

LED mark	Status	Description
SYS	Steady green	The switch is operating correctly.
	Flashing green (1 Hz)	The switch is performing power-on self test (POST).
	Steady red	The switch has failed the POST or is faulty.
	Off	The switch is powered off.

Power supply status LED

The HPE 5140 HI switches each provide two power supply slots at the rear. For each power supply, the switch provides a power supply status LED on the front panel.

Table 28 Power supply status LED description

LED mark	Status	Description
PWR1/PWR1	Steady green	A power supply is installed in the power supply slot, and the power supply is outputting power correctly.
	Steady yellow	A power supply is installed in the power supply slot, but the power supply has failed or no power is input to the power supply.
	Off	No power supply is installed in the power supply slot.

MODE LED

To show more information about the switch through the port status LEDs, the switch provides a MODE LED to indicate the type of information that the port status LEDs are showing.

You can use the mode button to change the indication of the MODE LED. After you press the mode button, the MODE LED changes in color and indication and keeps that state for only 60 seconds and then turns steady green automatically.

Table 29 Description for the MODE LED

LED mark	Status	Description
MODE	Steady green	The port status LEDs indicate port rates.
	Steady yellow	The port status LEDs indicate the duplex mode of the ports.
	Flashing green (1 Hz) (available only for HPE 5140 24G POE+ 4SFP+ 1-slot HI and HPE 5140 48G POE+ 4SFP+ 1-slot HI switches)	The port status LEDs indicate the PoE power supply status of the ports.
	Flashing yellow	The port status LEDs indicates the IRF member ID of the switch. For example, if the LEDs for ports 1 to 5 are steady green and the other LEDs are off, the IRF member ID of the switch is 5.

10/100/1000BASE-T autosensing Ethernet port LED

The switch provides a status LED for each 10/100/1000BASE-T autosensing Ethernet port. The port LED and the mode LED work in conjunction to indicate the operating status of the 10/100/1000BASE-T autosensing Ethernet port.

Table 30 10/100/1000BASE-T autosensing Ethernet port LED description

Mode LED status	10/100/1000BASE-T autosensing Ethernet port LED status	Description
Steady green (rate mode)	Steady green	A link is present on the port and the port is operating at 1000 Mbps.
	Flashing green	The port is sending or receiving data at 1000 Mbps
	Steady yellow	The port is operating at 10/100 Mbps.
	Flashing yellow	The port is sending or receiving data at 10/100 Mbps
	Off	No link is present on the port.
Steady yellow (duplex mode)	Steady green	The port is operating at full-duplex mode and a link is present on the port.
	Flashing green	The port is sending and receiving data at full-duplex mode.
	Steady yellow	The port is operating at half-duplex mode and a link is present on the port.
	Flashing yellow	The port is sending and receiving data at half-duplex mode.
	Off	No link is present on the port.
Flashing green (1 Hz) (PoE mode, available only for	Steady green	PoE power supply is normal.
	Flashing green (1 Hz)	The device attached to the port requires power

Mode LED status	10/100/1000BASE-T autosensing Ethernet port LED status	Description
HPE 5140 24G POE+ 4SFP+ 1-slot HI and HPE 5140 48G POE+ 4SFP+ 1-slot HI switches)		higher than the maximum or currently available PoE output power on the port.
	Steady yellow	The port is experiencing a PoE failure.
	Off	The port is not supplying power through PoE.
Flashing yellow (IRF mode)	The HPE 5140 24G 4SFP+ 1-slot HI, HPE 5140 48G 4SFP+ 1-slot HI ,HPE 5140 24G POE+ 4SFP+ 1-slot HI, and HPE 5140 48G POE+ 4SFP+ 1-slot HI switches use the 10/100/1000BASE-T autosensing Ethernet port LEDs to indicate the IRF member ID. For example, if the LEDs for ports 1 to 5 are steady green and the other port LEDs are off, the IRF member ID of the switch is 5.	

10G/5G/2.5G/1000/100BASE-T autosensing Ethernet port LED

Table 31 10G/5G/2.5G/1000/100BASE-T autosensing Ethernet port LED description

LED status	Description
Steady green	A link is present on the port and the port is operating at 10 Gbps.
Flashing green	The port is sending or receiving data at 10 Gbps.
Steady yellow	A link is present on the port and the port is operating at 100 Mbps, 1 Gbps, 2.5 Gbps, or 5 Gbps.
Flashing yellow	The port is sending or receiving data at 100 Mbps, 1 Gbps, 2.5 Gbps, or 5 Gbps.
Off	No link is present on the port.

SFP port LED

The SFP port LED and the mode LED work in conjunction to indicate the operating status of the SFP port.

Table 32 SFP port LED description

Mode LED status	SFP port LED status	Description
Steady green (rate mode)	Steady green	A link is present on the port and the port is operating at 1000 Mbps.
	Flashing green	The port is sending or receiving data at 1000 Mbps.
	Steady yellow	A link is present on the port and the port is operating at 100 Mbps.
	Flashing yellow	The port is sending or receiving data at 100 Mbps.
	Off	No link is present on the port.
Steady yellow (duplex mode)	Steady green	The port is operating at full-duplex mode and a link is present on the port.

Mode LED status	SFP port LED status	Description
	Flashing green	The port is sending and receiving data at full-duplex mode.
	Steady yellow	The port is operating at half-duplex mode and a link is present on the port.
	Flashing yellow	The port is sending and receiving data at half-duplex mode.
	Off	No link is present on the port.
Flashing yellow (IRF mode)	The HPE 5140 24G 4SFP+ 1-slot HI switch use 10/100/1000BASE-T autosensing Ethernet port LEDs to indicate the IRF member ID. When the Mode LED is flashing yellow (IRF mode), the SFP port LEDs are off.	

SFP+ port LED

Table 33 SFP+ port LED description

Mode LED status	SFP+ port LED status	Description
Steady green (rate mode)	Steady green	A link is present on the port and the port is operating at 10 Gbps.
	Flashing green	The port is sending or receiving data at 10 Gbps.
	Steady yellow	A link is present on the port and the port is operating at 1 Gbps.
	Flashing yellow	The port is sending or receiving data at 1 Gbps.
	Off	No link is present on the port.
Steady yellow (duplex mode)	Steady green	The port is operating at full-duplex mode and a link is present on the port.
	Flashing green	The port is sending and receiving data at full-duplex mode.
	Steady yellow	The port is operating at half-duplex mode and a link is present on the port.
	Flashing yellow	The port is sending and receiving data at half-duplex mode.
	Off	No link is present on the port.
Flashing yellow (IRF mode)	Off	When the Mode LED is flashing yellow (IRF mode), the port LEDs are off.

Management Ethernet port LED

Table 34 Management Ethernet port LED description

Management Ethernet port LED (ACT/LINK) status	Description
Steady green	A link is present on the port.
Flashing yellow	The port is sending or receiving data.
Off	No link is present on the port.

Expansion card status LED

The HPE 5140 HI switches each provide an expansion slot at the rear. The expansion card status LED on the front panel indicates the operating state of the expansion card.

Table 35 Expansion card status LED description

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

Port status LED on the expansion card

The expansion cards provide a port status LED for each port. For more information about the LEDs, see the manuals for the expansion cards.

Input status LED and output status LED on the power supply

The PSR720-56A and PSR1110-56A power supplies each have an input status LED and an output status LED. For more information about the LEDs, see the manuals for the power supplies.

Fan tray status LED on the fan tray

Each fan tray has a fan tray status LED to indicate its operating status.

Table 36 Fan tray status LED description

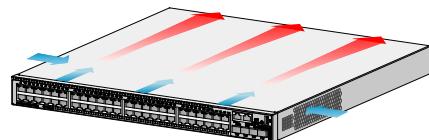
LED mark	Status	Description
FAN	Steady yellow	The fan tray is operating correctly.
	Flashing yellow (1 Hz)	The fan tray is faulty.
	Off	The fan tray is not installed securely or has no power input.

Appendix D Cooling system

The cooling system of the switch includes the air vents in the chassis, fan trays, and built-in fans of hot swappable power supplies. For correct operation of this cooling system, you must consider the site ventilation design when you plan the installation site for the switch.

When the fan trays are operating, ambient air flows in through the air vents in the port-side panel and in the switch sides, circulates through the chassis and the power supplies, and exhausts through the air vents in the fan tray and power supply panels, as shown in [Table 37](#).

Table 37 Cooling system

Device model	Fan tray type and model	Airflow direction
HPE 5140 24G 4SFP+ 1-slot HI HPE 5140 48G 4SFP+ 1-slot HI HPE 5140 24G PoE+ 4SFP+ 1-slot HI HPE 5140 48G PoE+ 4SFP+ 1-slot HI	HPE X721 power to port fan tray	From the power supply side to the port side and side panels (HPE 5140 48G 4SFP+ 1-slot HI switch as an example) 
	HPE X722 port to power fan tray	From the port side and side panels to the power supply side (HPE 5140 48G 4SFP+ 1-slot HI switch as an example) 

Document conventions and icons

Conventions

This section describes the conventions used in the documentation.

Command conventions

Convention	Description
Boldface	Bold text represents commands and keywords that you enter literally as shown.
<i>Italic</i>	<i>Italic</i> 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 Boldface. For example, the New User window opens; 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

Convention	Description
	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.
	Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a wireless terminator unit.
	Represents a wireless terminator.
	Represents a mesh access point.
	Represents omnidirectional signals.
	Represents directional signals.
	Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device.
	Represents a security module, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG module.

Examples provided in this document

Examples in this document might use devices that differ from your device in hardware model, configuration, or software version. It is normal that the port numbers, sample output, screenshots, and other information in the examples differ from what you have on your device.

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
www.hpe.com/support/hpesc

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates, go to either of the following:
 - Hewlett Packard Enterprise Support Center **Get connected with updates** page:
www.hpe.com/support/e-updates
 - Software Depot website:
www.hpe.com/support/softwaredepot
- To view and update your entitlements, and to link your contracts, Care Packs, and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:
www.hpe.com/support/AccessToSupportMaterials

! IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HP Passport set up with relevant entitlements.

Websites

Website	Link
Networking websites	
Hewlett Packard Enterprise Information Library for Networking	www.hpe.com/networking/resourcefinder
Hewlett Packard Enterprise Networking website	www.hpe.com/info/networking
Hewlett Packard Enterprise My Networking website	www.hpe.com/networking/support
Hewlett Packard Enterprise My Networking Portal	www.hpe.com/networking/mynetworking
Hewlett Packard Enterprise Networking Warranty	www.hpe.com/networking/warranty
General websites	
Hewlett Packard Enterprise Information Library	www.hpe.com/info/enterprise/docs
Hewlett Packard Enterprise Support Center	www.hpe.com/support/hpsc
Hewlett Packard Enterprise Support Services Central	ssc.hpe.com/portal/site/ssc/
Contact Hewlett Packard Enterprise Worldwide	www.hpe.com/assistance
Subscription Service/Support Alerts	www.hpe.com/support/e-updates
Software Depot	www.hpe.com/support/softwaredepot
Customer Self Repair (not applicable to all devices)	www.hpe.com/support/selfrepair
Insight Remote Support (not applicable to all devices)	www.hpe.com/info/insightremotesupport/docs

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

www.hpe.com/support/selfrepair

Remote support

Remote support is available with supported devices as part of your warranty, Care Pack Service, or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

For more information and device support details, go to the following website:

www.hpe.com/info/insightremotesupport/docs

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback@hpe.com). When submitting your feedback, include the document title,

part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.

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