

HP 5920&5900 Switch Series

Installation Guide



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Preparing for installation

Table 1 describes HP 5920 and 5900 Switch Series models, power supplies, and fan trays.

Table 1 HP 5920 and 5900 Switch Series models, power supplies, and fan trays

Product code	HP description	Alias
HP 5920 switches		
JG296A	HP 5920AF-24XG Switch	HP 5920AF-24XG
JG555A	HP 5920AF-24XG TAA-compliant Switch	HP 5920AF-24XG TAA
HP 5900 switches		
JC772A	HP 5900AF-48XG-4QSFP+ Switch	HP 5900AF-48XG-4QSFP+
JG554A	HP 5900AF-48XG-4QSFP+ TAA-compliant Switch	HP 5900AF-48XG-4QSFP+ TAA
JG838A	HP FlexFabric 5900CP-48XG-4QSFP+ Switch	HP 5900CP-48XG-4QSFP+
E7W29A	HP StoreFabric 5900CP-48XG-4QSFP+8Gb FC B-fan Trays Converged Switch	HP 5900CP-48XG-4QSFP+8Gb FC B-F
JG336A	HP 5900AF-48XGT-4QSFP+ Switch	HP 5900AF-48XGT-4QSFP+
JG510A	HP 5900AF-48G-4XG-2QSFP+ Switch	HP 5900AF-48G-4XG-2QSFP+
JH036A	HP 5900CP-48XG-4QSFP+ TAA-compliant Switch	HP 5900CP-48XG-4QSFP+ TAA
JH037A	HP 5900AF-48XGT-4QSFP+ TAA-compliant Switch	HP 5900AF-48XGT-4QSFP+ TAA
JH038A	HP 5900AF-48G-4XG-2QSFP+ TAA-compliant Switch	HP 5900AF-48G-4XG-2QSFP+ TAA
Power supplies		
JC680A	HP A58x0AF 650W AC Power Supply	650W AC power supply
JC681A	HP A58x0AF 650W DC Power Supply	650W DC power supply
Fan trays		
JC682A	HP A5820AF/A5800AF back (power side) to front (port side) airflow Fan Tray	LSWM1FANSC
JC683A	HP A5820AF/A5800AF front (port side) to back (power side) airflow Fan Tray	LSWM1FANSCB
JG552A	HP X711 Front (port side) to Back (power side) Airflow High Volume Fan Tray	LSWM1HFANSCB
JG553A	HP X712 Back (power side) to Front (port side) Airflow High Volume Fan Tray	LSWM1HFANSC
JG297A	HP 5920AF-24XG Back (power-side) to Front (port-side) Airflow Fan Tray	LSVM1FANSC
JG298A	HP 5920AF-24XG Front (port-side) to Back (power-side) Airflow Fan Tray	LSVM1FANSCB

- For regulatory identification purposes, the HP 5920AF-24XG and HP 5920AF-24XG TAA products are assigned Regulatory Model Numbers (RMNs). The Regulatory Model Numbers for these products are listed below. These regulatory numbers should not be confused with the marketing name HP 5920AF, or product codes JG296A and JG555A.

Product code	RMN	HP description
JG296A	BJNGA-AC0007	HP 5920AF-24XG Switch
JG555A	BJNGA-AC0007	HP 5920AF-24XG TAA-compliant Switch

- For regulatory identification purposes, the HP 5900AF-48XG-4QSFP+ and HP 5900AF-48XG-4QSFP+ TAA products are assigned Regulatory Model Numbers (RMNs). The Regulatory Model Numbers for these products are listed below. These regulatory numbers should not be confused with the marketing name HP 5900AF, or product codes JC772A and JG554A.

Product code	RMN	HP description
JC772A	BJNGA-AD0016	HP 5900AF-48XG-4QSFP+ Switch
JG554A	BJNGA-AD0016	HP 5900AF-48XG-4QSFP+ TAA-compliant Switch

- For regulatory identification purposes, the HP FlexFabric 5900CP-48XG-4QSFP+ Switch and HP StoreFabric 5900CP-48XG-4QSFP+ 8Gb FC B-fan Trays Converged Switch products are assigned Regulatory Model Numbers (RMNs). The Regulatory Model Numbers for these products are listed below. These regulatory numbers should not be confused with the marketing names HP FlexFabric 5900CP and HP StoreFabric 5900CP, or product codes JG838A and E7W29A.

Product code	RMN	HP description
JG838A	BJNGA-AD0023	HP FlexFabric 5900CP-48XG-4QSFP+ Switch
E7W29A	BJNGA-AD0023	HP StoreFabric 5900CP-48XG-4QSFP+ 8Gb FC B-fan Trays Converged Switch

- For regulatory identification purposes, the HP 5900AF-48XGT-4QSFP+ Switch is assigned a regulatory model number (RMN) BJNGA-AD0018. This regulatory number should not be confused with the marketing name HP 5900AF, or product code JG336A.
- For regulatory identification purposes, the HP 5900AF-48G-4XG-2QSFP+ Switch is assigned a regulatory model number (RMN) BJNGA-AD0017. This regulatory number should not be confused with the marketing name HP 5900AF, or product code JG510A.
- For regulatory identification purposes, the HP 5900CP-48XG-4QSFP+ TAA-compliant Switch, HP 5900AF-48XGT-4QSFP+ TAA-compliant Switch, and HP 5900AF-48G-4XG-2QSFP+ TAA-compliant Switch products are assigned Regulatory Model Numbers (RMNs). The Regulatory Model Numbers for these products are listed below. These regulatory numbers should not be confused with the marketing names HP 5900CP and HP 5900AF, or product codes JH036A, JH037A, and JH038A.

Product code	RMN	HP description
JH036A	BJNGA-AD0023	HP 5900CP-48XG-4QSFP+ TAA-compliant Switch
JH037A	BJNGA-AD0018	HP 5900AF-48XGT-4QSFP+ TAA-compliant Switch

Product code	RMN	HP description
JH038A	BJNGA-AD0017	HP 5900AF-48G-4XG-2QSFP+ TAA-compliant Switch

Safety recommendations

To avoid any equipment damage or bodily injury, 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.
- Make sure the operating voltage is in the required range.
- To avoid electrical shocks, do not open the chassis while the switch is operating or when the switch is just powered off.
- When replacing FRUs, including 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. To rack-mount your switch, make sure the following requirements are met:

- Adequate clearance is reserved at the air inlet and outlet vents for ventilation.
- The rack 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 bottom device from entering the top device.
- The rack is sturdy enough to support the switch and its accessories.
- The rack 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

Make sure the temperature and humidity in the equipment room are in the acceptable range.

- Lasting high relative humidity can cause poor insulation, electricity creepage, mechanical property change of materials, and metal corrosion.

- Lasting low relative humidity can cause washer contraction and ESD and bring problems including loose captive screws and circuit failure.
- High temperature can accelerate the aging of insulation materials and significantly lower the reliability and lifespan of the switch.

For the temperature and humidity requirements of different switch models, see "[Appendix A Chassis views and technical specifications.](#)"

Cleanliness

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

Table 2 Dust concentration limit in the equipment room

Substance	Concentration limit (particles/m ³)
Dust	≤ 3 × 10 ⁴ (no visible dust on the tabletop over three days)

NOTE:
Dust diameter ≥ 5 μm

The equipment room must also meet limits on salts, acids, and sulfides to eliminate corrosion and premature aging of components, as shown in [Table 3](#).

Table 3 Harmful gas limits in the equipment room

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

EMI

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

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

To prevent EMI, perform the following tasks:

- 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.

Laser safety

WARNING!

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

The switch is a Class 1 laser device.


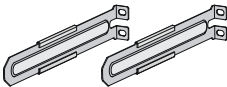
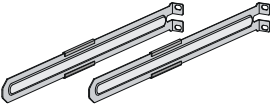

Installation tools

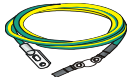

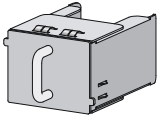


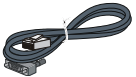


The installation tools are not provided with the switch. Prepare them yourself.

- Phillips screwdriver
- ESD wrist strap

Installation accessories

Table 4 Installation accessories

Product code	Description	Quantity	Applicable models
5066-0850	1 U mounting bracket kit (including one pair of mounting brackets and eight M4 countersunk screws) 	1 kit	All 5920&5900 switches
5185-8681	1 U short slide rail kit (including one pair of slide rails and four M4 countersunk screws) 	1 kit	All 5920&5900 switches
5185-8713	1 U long slide rail kit (including one pair of slide rails, one pair of guide rails, and four M4 countersunk screws) 	Optional	<ul style="list-style-type: none"> • HP 5900AF-48G-4XG-2QSFP+ • HP 5900AF-48G-4XG-2QSFP+ TAA
N/A	M6 screw and floating nut 	User supplied	All 5920&5900 switches

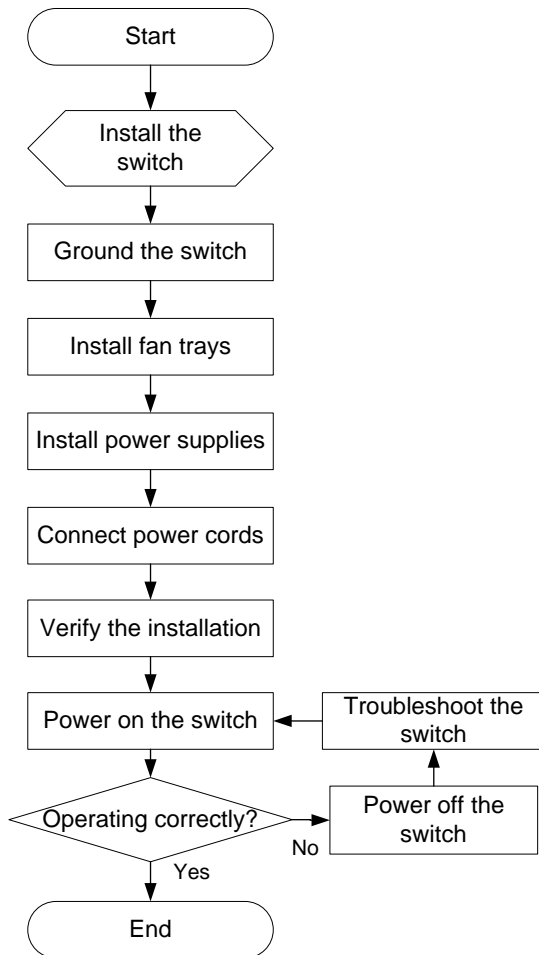
Product code	Description	Quantity	Applicable models
5184-6723	Grounding cable 	1	All 5920&5900 switches
5185-9579	Grounding screw 	2	All 5920&5900 switches
5185-8676	Power supply filler module 	1	All 5920&5900 switches
5185-8688	DC power cord 	1	650 W DC power supply
5185-8748	Removable cable tie 	1	All power supplies
5185-8627	Console cable 	1	All 5920&5900 switches
5185-8722	SFP/SFP+ dust plug 	Optional	<ul style="list-style-type: none"> • HP 5920AF-24XG • HP 5920AF-24XG TAA • HP 5900AF-48XG-4QSFP+ • HP 5900AF-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+ • HP 5900CP-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+8Gb FC B-F • HP 5900AF-48G-4XG-2QSFP+ • HP 5900AF-48G-4XG-2QSFP+ TAA
5187-9022	QSFP+ dust plug 	Optional	<ul style="list-style-type: none"> • HP 5900AF-48XG-4QSFP+ • HP 5900AF-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+ • HP 5900CP-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+8Gb FC B-F • HP 5900AF-48G-4XG-2QSFP+ • HP 5900AF-48G-4XG-2QSFP+ TAA • HP 5900AF-48XGT-4QSFP+ • HP 5900AF-48XGT-4QSFP+ TAA

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

Figure 1 Hardware installation flow



Installing the switch in a 19-inch rack

Rack requirements

The rack for the switch must meet the requirements described in [Table 5](#).

Table 5 Requirements for the rack

Switch model	Installation method	Requirements for the rack
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Switch model	Installation method	Requirements for the rack
<ul style="list-style-type: none"> HP 5920AF-24XG HP 5920AF-24XG TAA 	Using mounting brackets and short slide rails (provided)	<ul style="list-style-type: none"> Depth—A minimum of 1000 mm (39.37 in). Distance between the front and rear rack posts—401 mm (15.79 in) to 895 mm (35.24 in).
<ul style="list-style-type: none"> HP 5900AF-48XG-4QSFP+ HP 5900AF-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+ HP 5900CP-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+8Gb FC B-F HP 5900AF-48XGT-4QSFP+ HP 5900AF-48XGT-4QSFP+ TAA 	Using mounting brackets and short slide rails (provided)	<ul style="list-style-type: none"> Depth—A minimum of 1000 mm (39.37 in). Distance between the front and rear rack posts—405 mm (15.94 in) to 854 mm (33.62 in).
<ul style="list-style-type: none"> HP 5900AF-48G-4XG-2QSFP+ HP 5900AF-48G-4XG-2QSFP+ TAA 	Using mounting brackets and short slide rails (provided)	Distance between the front and rear rack posts: 401 mm (15.79 in) to 654 mm (25.75 in).
	Using mounting brackets and long slide rails (optional, part number 5185-8713)	Distance between the front and rear rack posts: 621 mm (24.45 in) to 874 mm (34.41 in).

Mounting brackets and rack mounting rail kit

The switch comes with a pair of mounting brackets and a rack mounting kit that includes a pair of chassis rails and a pair of slide rails. See [Figure 2](#) and [Figure 3](#).

Figure 2 1U mounting bracket kit

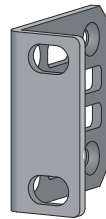
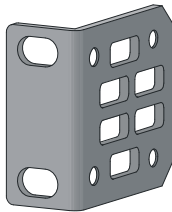
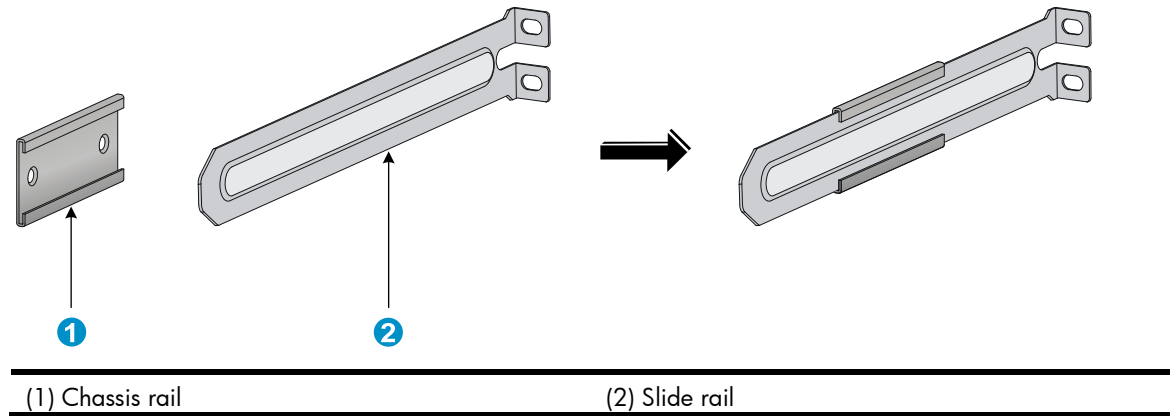
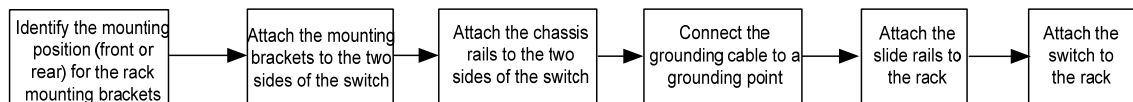


Figure 3 Rack mounting rail kit



Rack-mounting procedures at a glance

Figure 4 Rack-mounting procedure



! IMPORTANT:

To make sure the switch is securely installed in the rack, you must install both the mounting brackets and rack mounting rail kit.

NOTE:

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

Attaching the mounting brackets, chassis rails, and grounding cable to the chassis

The switch has one front mounting position (near the network ports) and one rear mounting position (near the power supplies).

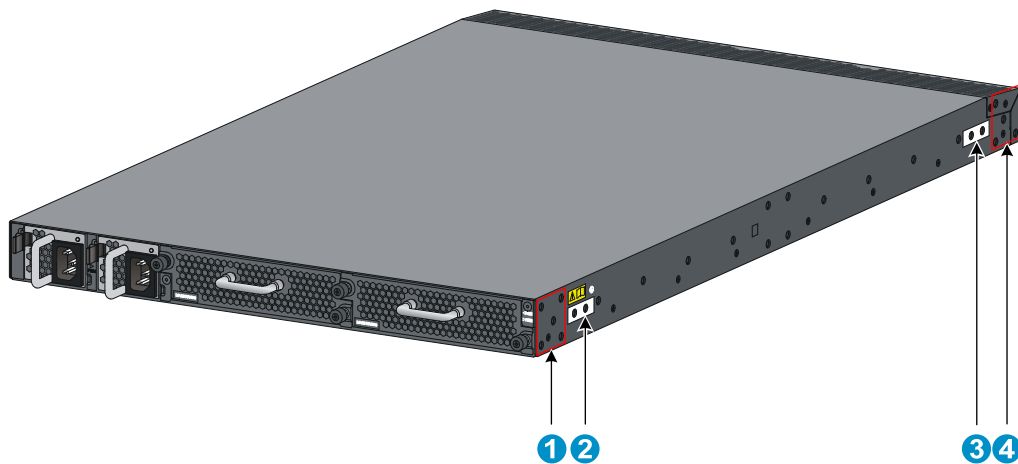
The switch provides grounding points as described in [Table 6](#).

Table 6 Grounding points for the switch

Switch model	Grounding point	Remarks
<ul style="list-style-type: none"> HP 5920AF-24XG. HP5920AF-24XG TAA. 	One primary grounding point (with a grounding sign) and one auxiliary grounding point	N/A

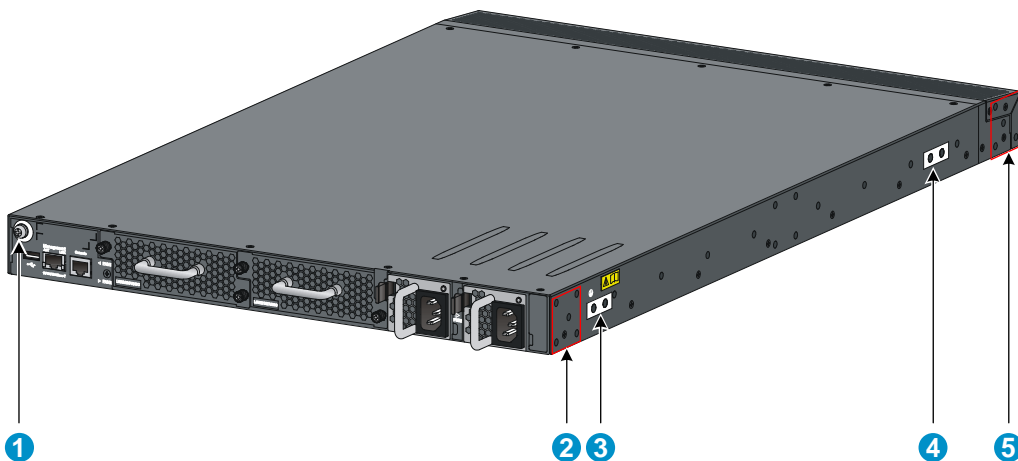
Switch model	Grounding point	Remarks
<ul style="list-style-type: none"> HP 5900AF-48XG-4QSFP+. HP 5900AF-48XG-4QSFP+ TAA. HP 5900CP-48XG-4QSFP+. HP 5900CP-48XG-4QSFP+ TAA. HP 5900CP-48XG-4QSFP+8Gb FC B-F. HP 5900AF-48XGT-4QSFP+. HP 5900AF-48XGT-4QSFP+ TAA. HP 5900AF-48G-4XG-2QSFP+. HP 5900AF-48G-4XG-2QSFP+ TAA. 	<p>One primary grounding point (with a grounding sign) and two auxiliary grounding points</p>	<ul style="list-style-type: none"> HP recommends that you use the primary grounding point or auxiliary grounding point 1. The grounding cable and grounding screws that come with the switch are only for connecting these two grounding points. You must prepare a grounding cable yourself if you use auxiliary grounding point 2.

Figure 5 Mounting and grounding positions of the HP 5920AF-24XG/5920AF-24XG TAA switch



- | | |
|---------------------------------|-----------------------------|
| (1) Rear mounting position | (2) Primary grounding point |
| (3) Auxiliary grounding point 1 | (4) Front mounting position |

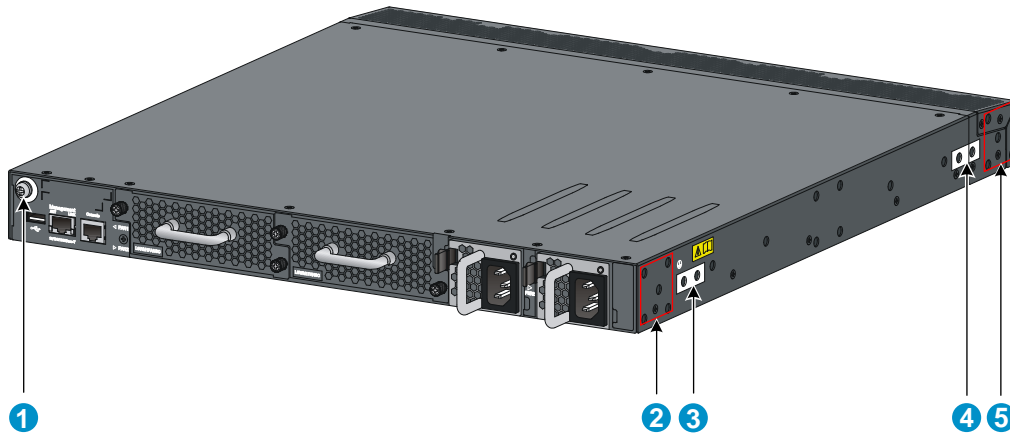
Figure 6 Mounting and grounding positions of the HP 5900AF-48XG-4QSFP+/5900AF-48XG-4QSFP+ TAA/5900CP-48XG-4QSFP+/5900CP-48XG-4QSFP+ TAA/5900CP-48XG-4QSFP+8Gb FC B-F/5900AF-48XGT-4QSFP+/5900AF-48XGT-4QSFP+ TAA switch



- (1) Auxiliary grounding point 2
- (3) Primary grounding point
- (5) Front mounting position

- (2) Rear mounting position
- (4) Auxiliary grounding point 1

Figure 7 Mounting and grounding positions of the HP 5900AF-48G-4XG-2QSFP+/HP 5900AF-48G-4XG-2QSFP+ TAA switch



- (1) Auxiliary grounding point 2
- (3) Primary grounding point
- (5) Front mounting position

- (2) Rear mounting position
- (4) Auxiliary grounding point 1

Attaching the mounting brackets and chassis rails to the chassis

1. Align the mounting brackets with the screw holes in the rear mounting position or front mounting position. See [Figure 8](#) and [Figure 9](#).
2. Use M4 screws (provided) to attach the mounting brackets to the chassis.
3. Align the chassis rails with the rail mounting holes in the chassis:
 - If the mounting brackets are in the rear mounting position, align the chassis rails with the screw holes at the front of the side panels. See [Figure 8](#).
 - If the mounting brackets are in the front mounting position, align the chassis rails with the screw holes at the rear of the side panels. See [Figure 9](#).
4. Use M4 screws (provided) to attach the chassis rails to the chassis.

NOTE:

Secure the mounting brackets and chassis rails to both sides of the chassis in the same way.

Connecting the grounding cable

⚠ CAUTION:

The primary grounding point and auxiliary grounding point 1 are located on the left side panel. If you use one of these grounding points, you must connect the grounding cable to the grounding point before you mount the switch in the rack.

NOTE:

- HP recommends that you use the primary grounding point or auxiliary grounding point 1 because the grounding cable and grounding screw that come with the switch are suitable only for these two grounding points.
 - To use auxiliary grounding point 2, you must prepare a grounding cable yourself.
-

To connect the grounding cable:

1. Choose a grounding point.
2. Unpack the grounding cable and grounding screws.
3. Align the two-hole grounding lug at one end of the cable with the grounding holes of the grounding point. Use the grounding screws to attach the grounding lug to the chassis, as shown in [Figure 8](#).

Figure 8 Attaching the rear mounting brackets/chassis rails/grounding cable to the chassis

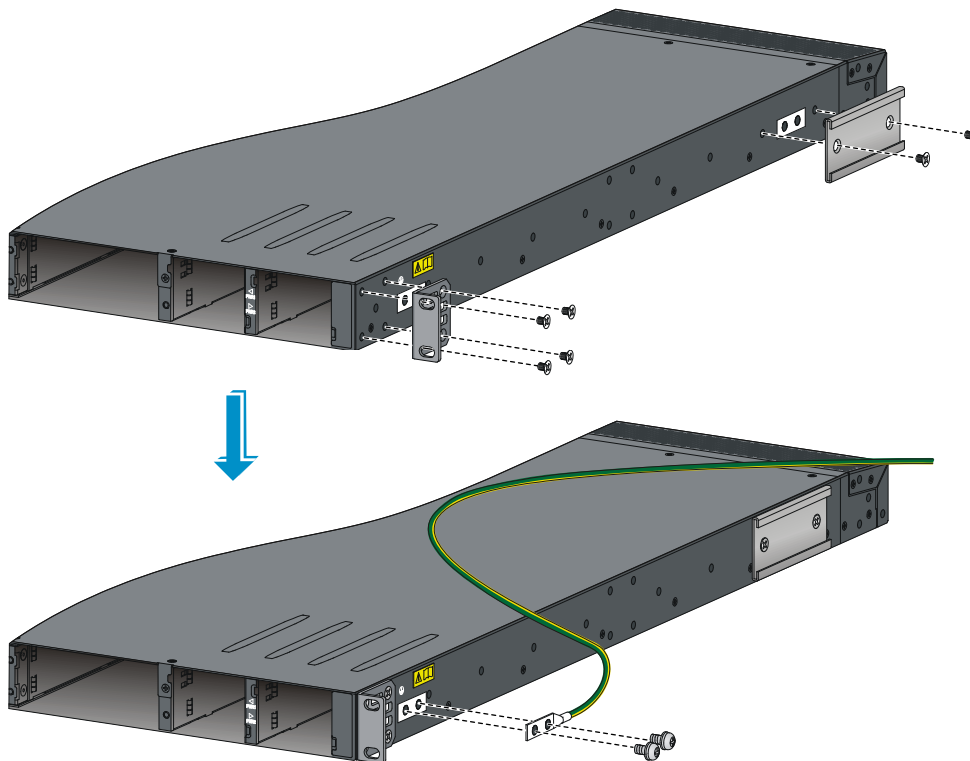
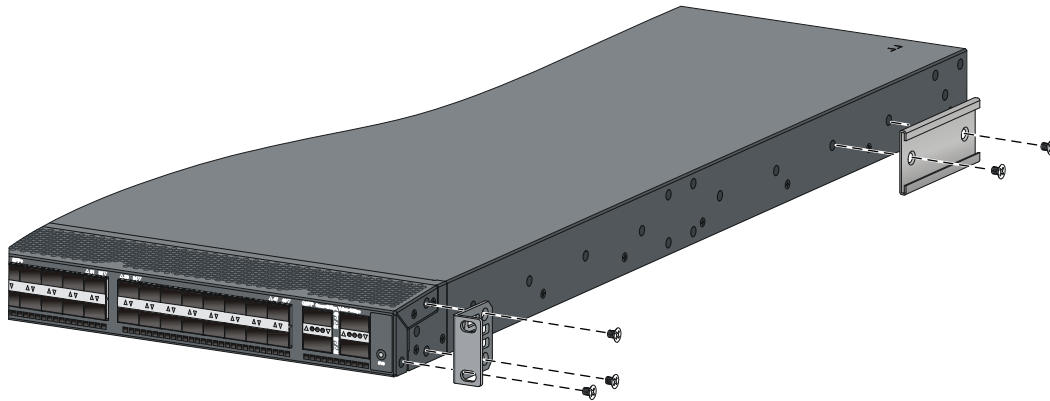


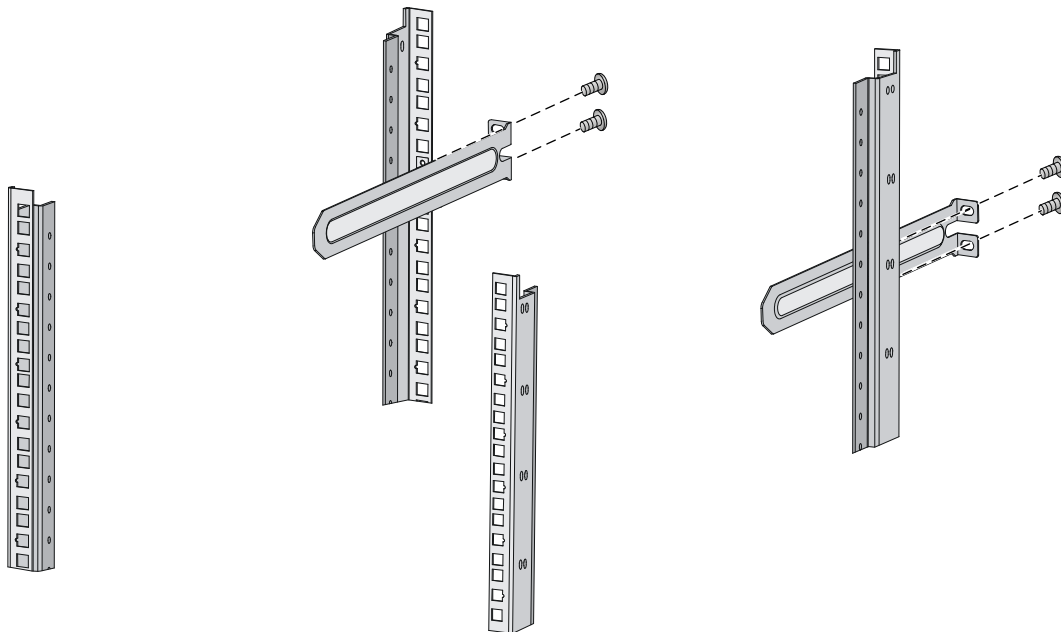
Figure 9 Attaching the front mounting brackets/chassis rails to the chassis



Attaching the slide rails to the rack

1. Identify the rack attachment position for the slide rails.
2. Install cage nuts (user-supplied) in the mounting holes in the rack posts.
3. Align the screw holes in one slide rail with the cage nuts in the rack post on one side, and use screws (user supplied) to attach the slide rail to the rack, as shown in [Figure 10](#).
4. Repeat the preceding step to attach the other slide rail to the rack post on the other side.
Keep the two slide rails at the same height so the slide rails can attach into the chassis rails.

Figure 10 Installing the slide rails



Mounting the switch in the rack

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

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

2. Verify that the mounting brackets and chassis rails have been securely attached to the switch chassis.
3. Verify that the slide rails have been correctly attached to the rear rack posts.
4. Install cage nuts (user-supplied) to the front rack posts and make sure they are at the same level as the slide rails.
5. Supporting the bottom of the switch, align the chassis rails with the slide rails on the rack posts, as shown in [Figure 11](#). Work with another person to slide the chassis rails along the slide rails until the mounting brackets are flush with the rack posts.
6. Use screws (user-supplied) to attach the mounting brackets to the rack, as shown in [Figure 12](#).
To secure the switch in the rack, make sure the front ends of the slide rails reach out of the chassis rails.

Figure 11 Mounting the switch in the rack (1)

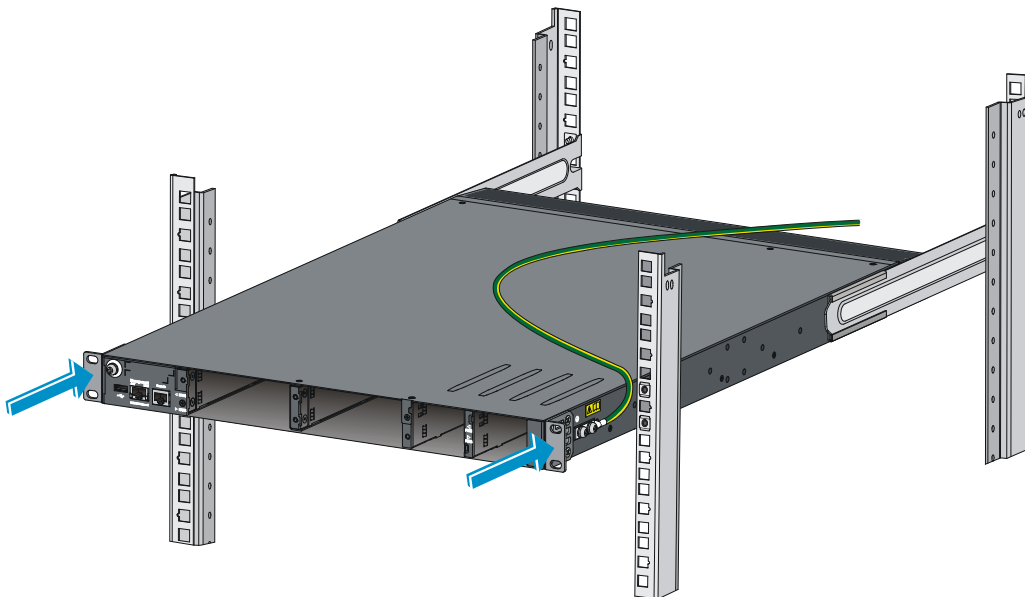
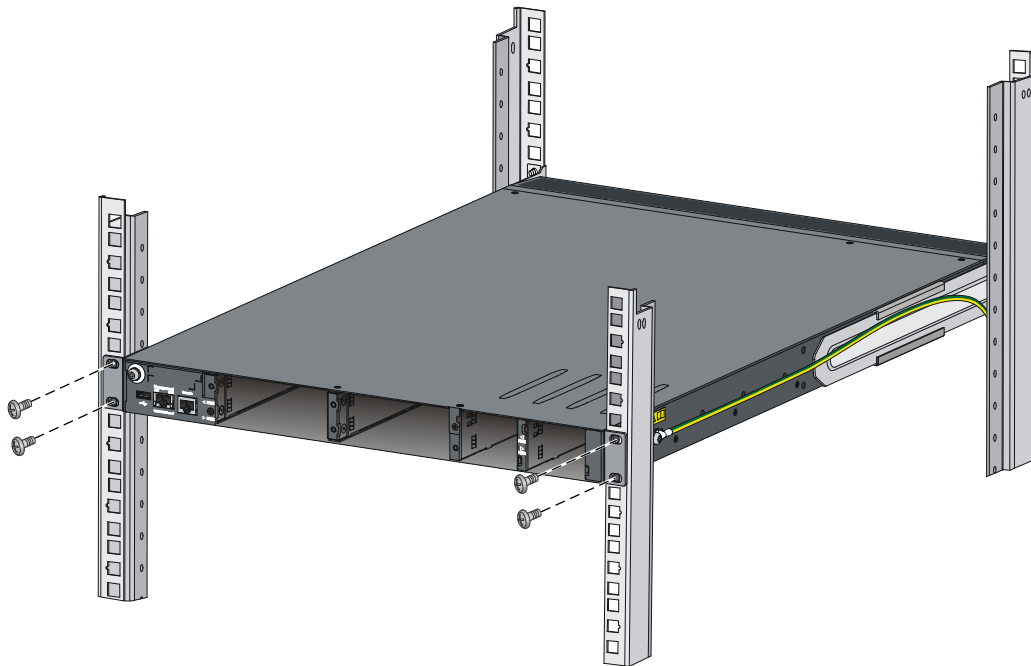


Figure 12 Mounting the switch in the rack (2)



Grounding the switch

⚠ WARNING!

Correctly connecting the switch 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 a switch by using a grounding strip at the installation site or the AC power cord connected to the switch.

NOTE:

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

Grounding the switch with a grounding strip

⚠ WARNING!

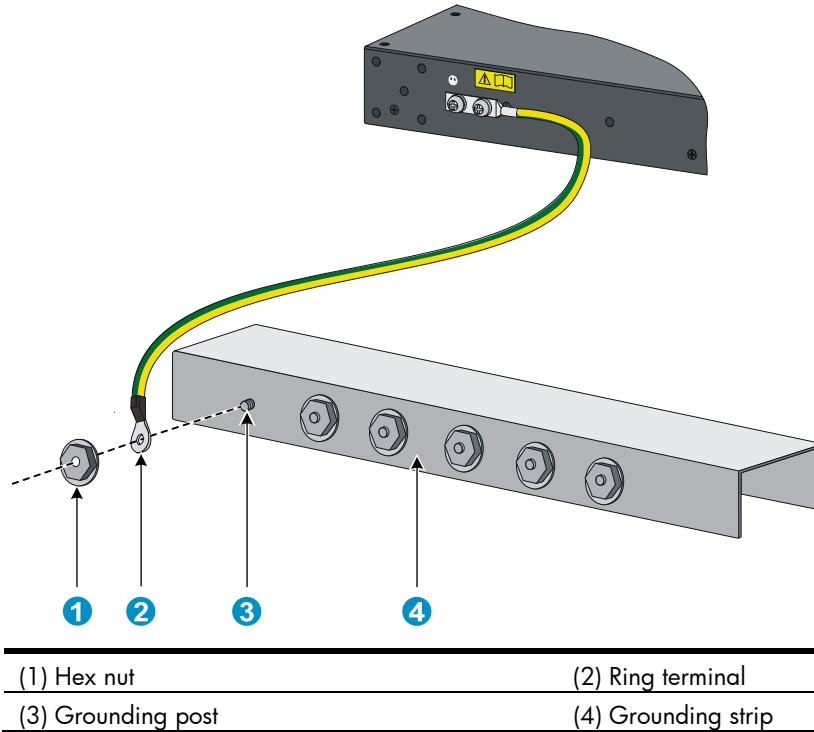
Connect the grounding cable to the grounding system in the equipment room. Do not connect it to a fire main or lightning rod.

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

To connect the grounding cable:

1. Attach the two-hole grounding lug at one end of the grounding cable to a grounding point on the switch chassis. See "Connecting the grounding cable."
2. Remove the hex nut of a grounding post on the grounding strip.
3. Attach the ring terminal at the other end of the grounding cable to a grounding post on the grounding strip, and fasten the ring terminal with the removed hex nut.

Figure 13 Connecting the grounding cable to a grounding strip



Grounding the switch by using the AC power cord

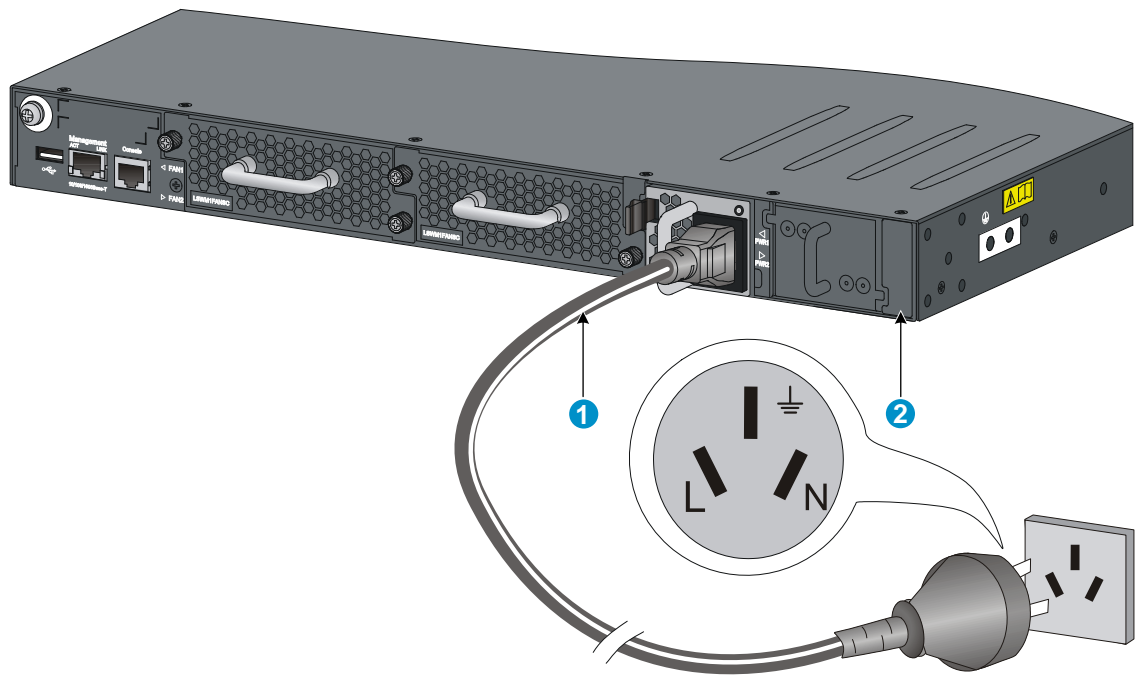
If the installation site does not have any grounding strips, you can ground an AC-powered switch through the protective earth (PE) wire of the power cord, but must make sure:

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

NOTE:

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

Figure 14 Grounding through the PE wire of the AC power cord



(1) Three-wire AC power cable

(2) Chassis rear panel

NOTE:

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

Installing/removing a fan tray

CAUTION:

To ensure good ventilation for the switch:

- Install two fan trays of the same model on the switch.
- Do not power on the switch when no or only one fan tray is installed.
- If one fan tray fails, perform the following tasks:
 - Finish replacing the fan tray within 24 hours and do not remove the failed fan tray before replacement when the ambient temperature is below 27°C (80.6°F).
 - Replace the fan tray immediately when the ambient temperature is above 27°C (80.6°F).
- If both fan trays fail, finish replacing the fan trays within 2 minutes.

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 while inserting the fan tray, pull out the fan tray and insert it again.

Select fan trays as required. For the available fan trays and their specifications, see "Fan trays."

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 handle of the fan tray with one hand and support the fan tray bottom with the other, 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. See callout 1 in Figure 15 or Figure 16.
4. Fasten the captive screw on the fan tray with a Phillips screwdriver until the fan tray is securely attached in the chassis. See callout 2 in Figure 15 or Figure 16.

If the captive screw cannot be tightly fastened, verify the installation of the fan tray.

Figure 15 Installing an LSWM1FANSC/LSWM1FANSCB/LSWM1HFANSC/LSWM1HFANSCB fan tray (to the HP 5900AF-48XG-4QSFP+)

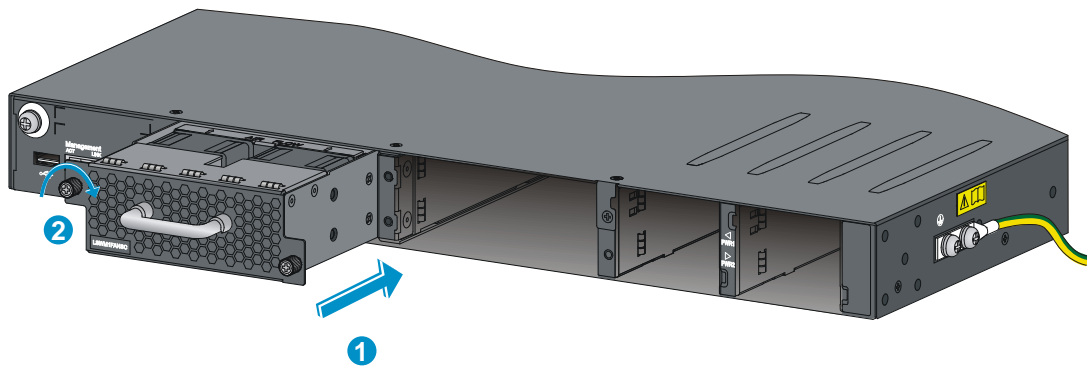
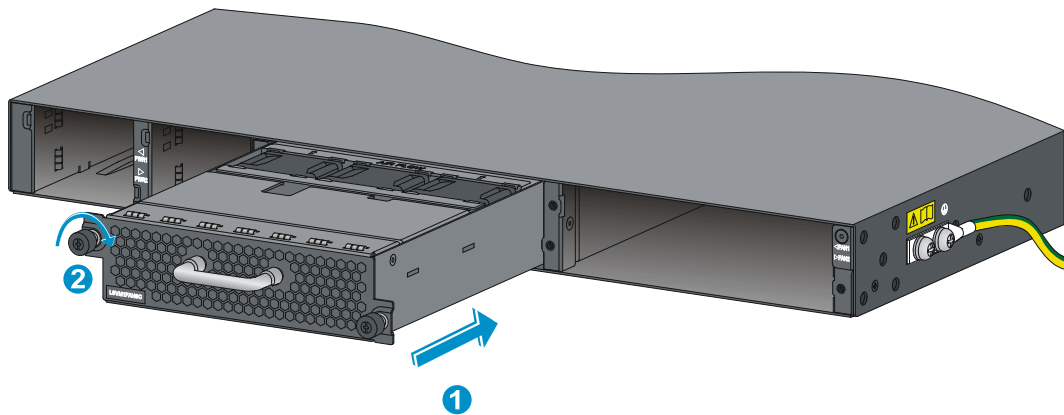


Figure 16 Installing an LSVM1FANSC/LSVM1FANSCB fan tray to the HP 5920AF-24XG



Removing a fan tray

⚠ WARNING!

- Do not take out the fan tray until the fans completely stop rotating.
- Never touch the fans and rotation axis.

To remove a fan tray:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Loosen the captive screw of the fan tray with a Phillips screwdriver until it is fully disengaged from the switch chassis.
3. Grasp the handle of the fan tray with one hand and pull the fan tray part way out the slot. Support the fan tray bottom with the other hand, and pull the fan tray slowly along the guide rails out of the slot.
4. Put away the removed fan tray in an antistatic bag for future use.

Installing/removing a power supply

WARNING!

- Do not install AC and DC power supplies on the same switch.
- Provide a circuit breaker for each power supply and make sure the circuit breaker is off before installation.
- In power redundancy mode, you can replace a power supply without powering off the switch but must strictly follow the installation and procedures in [Figure 17](#) and [Figure 18](#) to avoid any bodily injury or damage to the switch.

The switch comes with both power supply slots empty and filler modules for the slots as accessories.

You can install one power supply, or two power supplies for redundancy on the switch. For more information about the power supplies available for the switches, see "[Power supplies.](#)"

Figure 17 Installation procedure

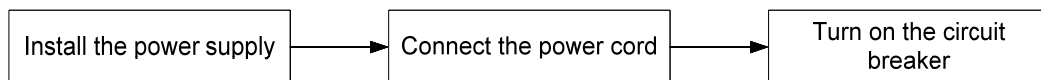
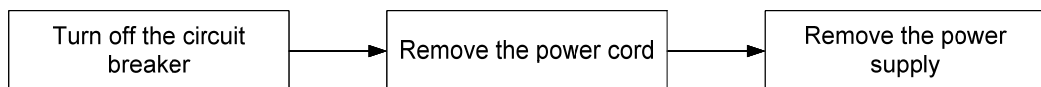


Figure 18 Removal procedure



NOTE:

HP A58x0AF 650W AC power supply is referred to as 650W AC power supply and HP A58x0AF 650W DC power supply is referred to as 650W DC power supply throughout this installation guide.

Installing a power supply

⚠ CAUTION:

- Follow the forward inertia of the power supply when inserting it into the chassis, and make sure the power supply has firm contact with the connectors on the backplane.
- To prevent damage to the connectors inside the switch chassis, insert the power supply gently. If you encounter a hard resistance while inserting the power supply, pull out the power supply and insert it again.
- If only one power supply is installed, install a filler module in the empty power supply slot for good ventilation of the switch.

To install a 650W AC power supply or 650W DC power supply in the switch:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Unpack the power supply and verify that the power supply model is correct.
3. Correctly orient the power supply with the power supply slot (as shown in [Figure 19](#)), 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.

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

Figure 19 Installing a power supply

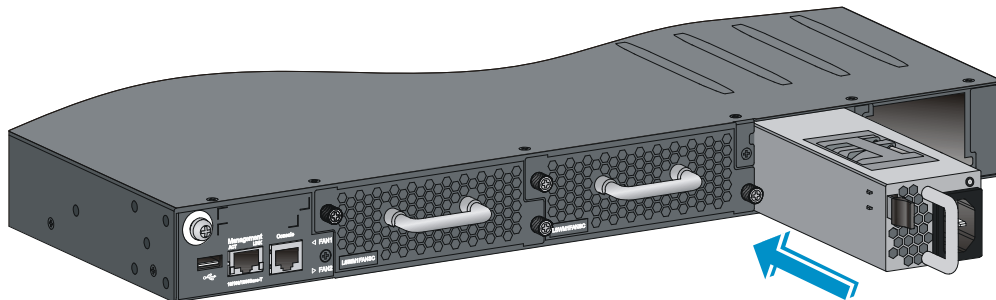
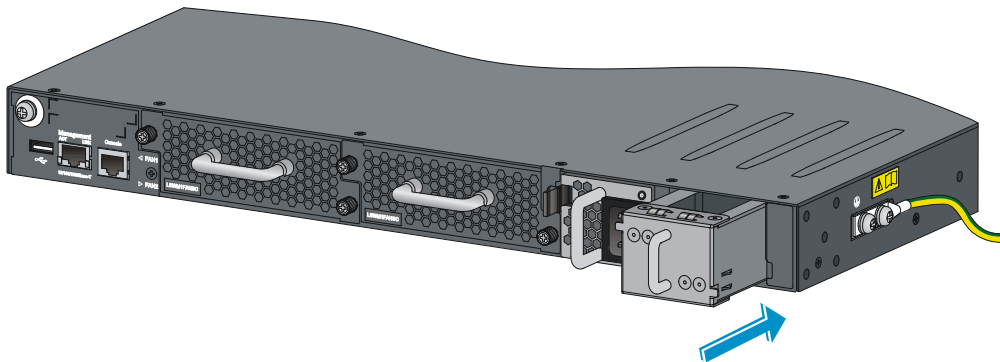


Figure 20 Installing a filler module



Removing a power supply

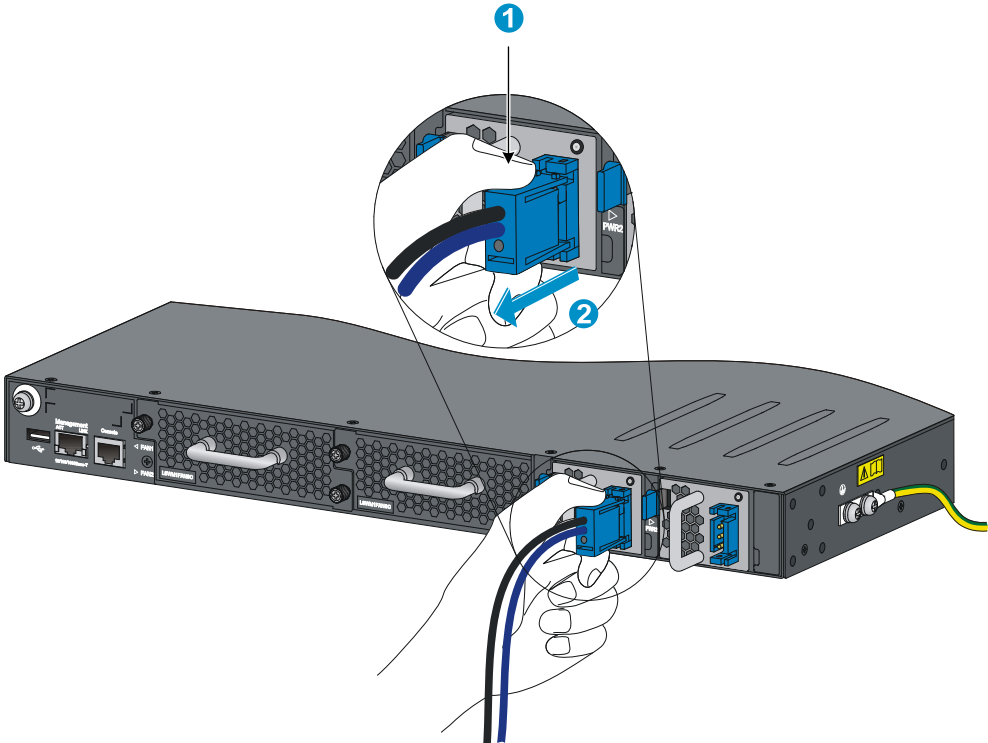
△ CAUTION:

If the switch has two power supplies, removing one power supply does not affect the operation of the switch. If the switch has only one power supply, removing the power supply powers off the switch.

To remove a 650W AC or 650W DC power supply from the switch:

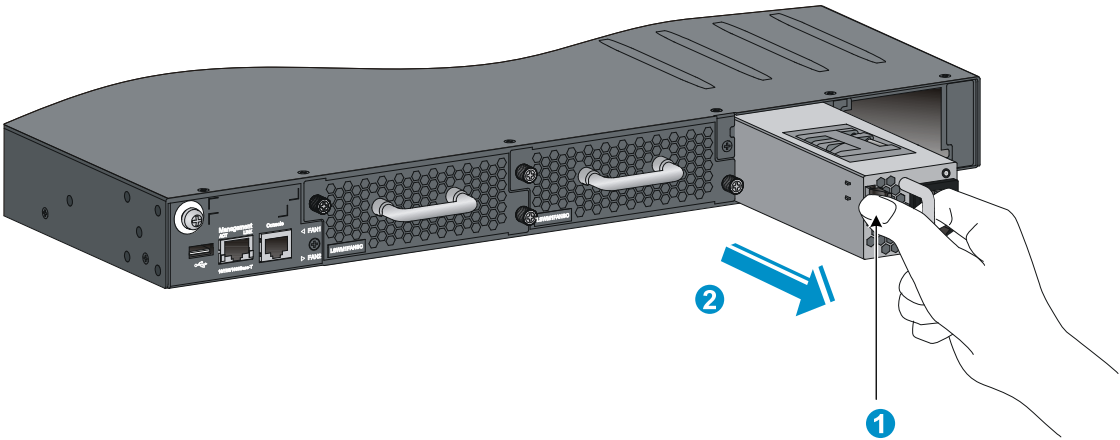
1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Squeeze the tabs on the power cord connector with your thumb and forefinger, and pull the connector out to remove the power cord, as shown in [Figure 21](#).
3. Hold the handle on the power supply with one hand, pivot the latch on the power supply to the right with your thumb, and pull the power supply part way out of the slot, as shown in [Figure 22](#).
4. Supporting the power supply bottom with one hand, slowly pull the power supply out with the other hand.
5. Put away the removed power supply in an antistatic bag for future use.

Figure 21 Removing the DC power cord



(1) Press the tabs on the power cord connector with your thumb and forefinger (2) Pull the power cord connector out

Figure 22 Removing the power supply



(1) Pivot the latch to the right with your thumb (2) Pull the power supply out

Connecting the power cord

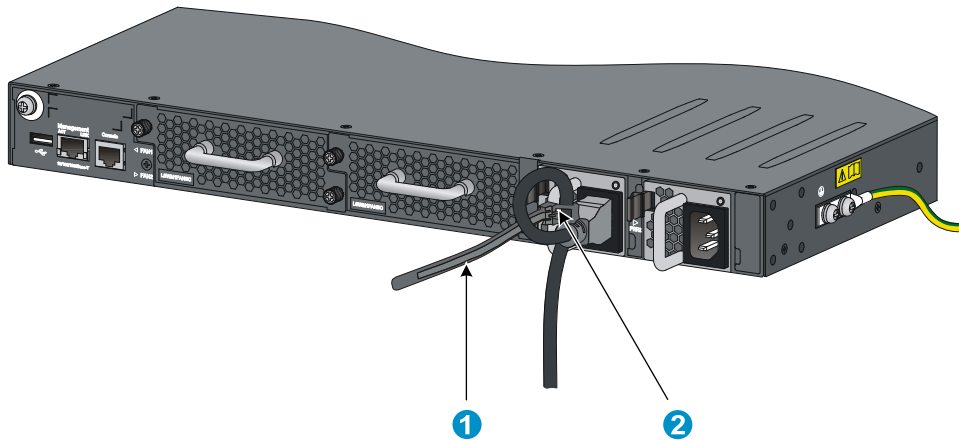
△ CAUTION:

- Provide a circuit breaker for each power supply.
- Before you connect the power cord for a power supply, make sure the circuit breaker for the power supply is turned off.

Connecting the 650W AC power supply

1. Insert the female connector of the AC power cord supplied with the power supply into the power receptacle on the power supply.
2. Use a cable tie to secure the power cord to the handle of the power supply, as shown in [Figure 23](#).
3. Connect the other end of the power cord to an AC power outlet.

Figure 23 Connecting the 650W AC power supply



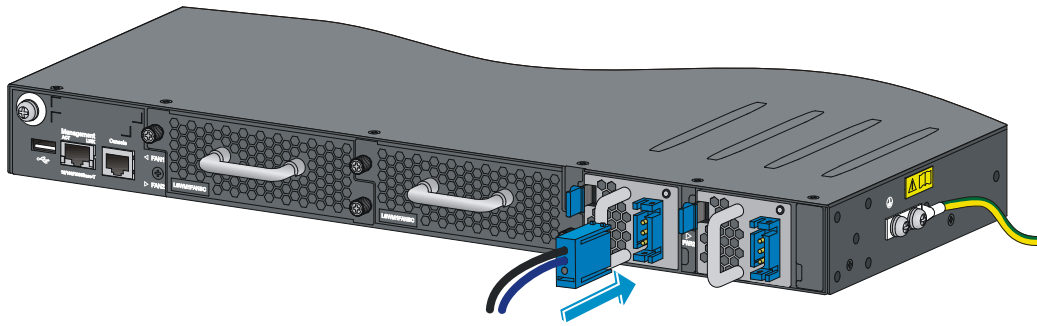
(1) Cable tie

(2) Fasten the cable tie to secure the power cord to the handle of the power supply

Connecting the 650W DC power supply

1. Unpack the DC power cord, identify the plug for connecting to the power supply, orient the plug with the power receptacle on the power supply, and insert the plug into the receptacle. See [Figure 24](#).
The receptacle is foolproof. If you cannot insert the plug into the receptacle, re-orient the plug rather than use excessive force to push it in.
2. Use a cable tie to secure the power cord to the handle of the power supply, as shown in [Figure 23](#).
3. Connect the other end of the power cord to the DC power source.

Figure 24 Connecting the 650W DC power supply



Verifying the installation

After you complete the installation, verify that:

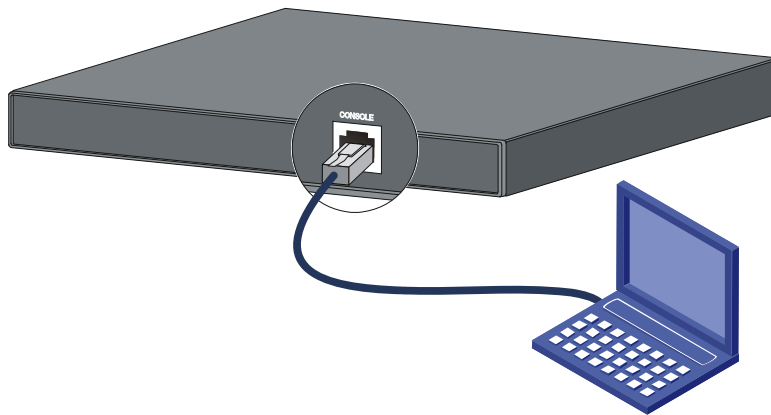
- There is enough space for heat dissipation around the switch, and the rack is stable.
- The grounding cable is securely connected.
- The correct power source is used.
- The power cords are correctly connected.
- All the interface cables are cabled indoors. If any cable is routed outdoors, verify that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

Accessing the switch for the first time

Setting up the configuration environment

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

Figure 25 Connecting the console port to a terminal



Connecting the console cable

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

Figure 26 Console cable

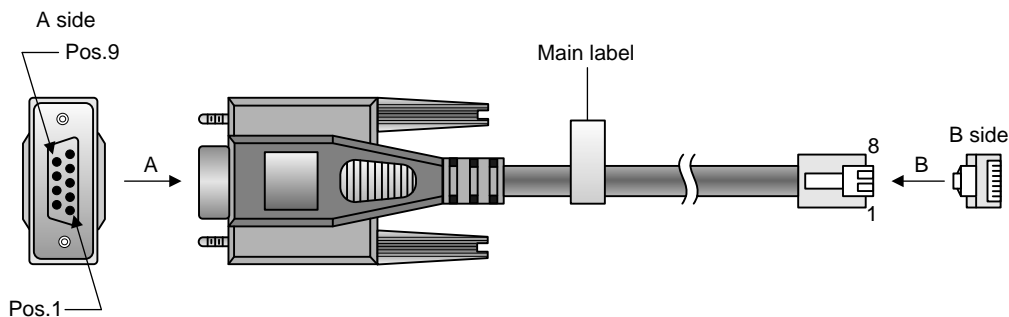


Table 7 Console cable pinouts

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 a terminal (for example, a PC) to the switch:

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

NOTE:

- Identify the mark on the console port and make sure you are connecting to the correct port.
- The serial ports on PCs do not support hot swapping. 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.

Setting terminal parameters

To configure and manage the switch through the console port, you must run a terminal emulator program, HyperTerminal or PuTTY, 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.

The following are the required terminal settings:

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

Powering on the switch

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

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

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

versions. For more information about Boot ROM menu options, see the release notes for the switch software.

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

For more information about the configuration commands and CLI, see *HP 5920 & 5900 Switch Series Configuration Guide* and *HP 5920 & 5900 Switch Series Command References*.

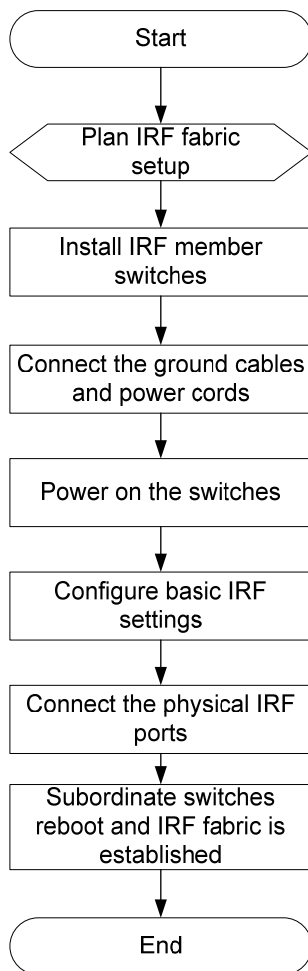
Setting up an IRF fabric

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

To set up IRF links between the switches, use SFP+ ports, 1/10-GE Ethernet ports, or QSFP+ ports.

IRF fabric setup flowchart

Figure 27 IRF fabric setup flowchart



To set up an IRF fabric:

Step	Description
------	-------------

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 site. • Identifying the master switch and planning IRF member IDs. • Planning IRF topology and connections. • Identifying physical IRF ports on the member switches. • Planning the cabling scheme.
2. Install IRF member switches.	See " Installing the switch in a 19-inch rack. "
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>HP 5920 & 5900 Switch Series IRF Configuration Guide</i> .
6. Connect the physical IRF ports.	Connect the physical IRF ports on switches. Use SFP+ or QSFP+ transceiver modules and fibers for long-distance connection. Use SFP+ or QSFP+ DAC cables for short-distance connection. 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 top-of-rack (ToR) access solution for a data center.

NOTE:

As your business grows, you can plug an HP 5920 or 5900 switch into an IRF fabric to increase the switching capacity without any topology change or replacement.

Identifying the master switch and planning IRF member IDs

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

NOTE:

IRF member switches will automatically elect a master. You can affect the election result by assigning a high member priority to the intended master switch. For more information about master election, see *HP 5920 & 5900 Switch Series IRF Configuration Guide*.

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

Planning IRF topology and connections

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

You connect the IRF member switches through IRF ports, 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 28 and Figure 29 show the daisy chain topology and ring topology, respectively. The physical port connections in these figures are for illustration only, and more connection methods are available.

Figure 28 IRF fabric in daisy chain topology

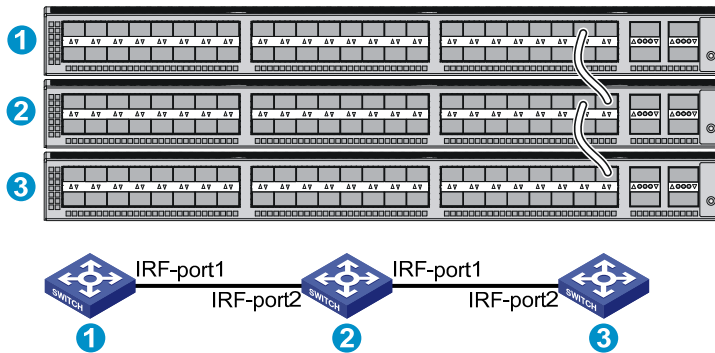
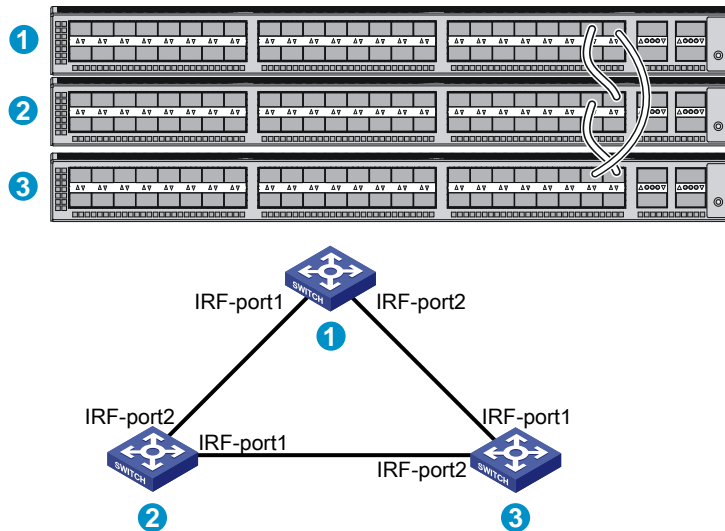


Figure 29 IRF fabric in ring topology



Identifying physical IRF ports on the member switches

Identify the SFP+ or QSFP+ ports to be used for IRF connections on the member switches according to your topology and connection scheme.

Table 8 describes the physical ports available for establishing IRF connections:

Table 8 Physical ports available for IRF connections

Switch model	Physical port available for IRF connections
<ul style="list-style-type: none"> HP 5900AF-48XG-4QSFP+ HP 5900AF-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+ HP 5900CP-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+8Gb FC B-F HP 5900AF-48G-4XG-2QSFP+ HP 5900AF-48G-4XG-2QSFP+ TAA 	<ul style="list-style-type: none"> SFP+ port QSFP+ port
<ul style="list-style-type: none"> HP 5900AF-48XGT-4QSFP+ HP 5900AF-48XGT-4QSFP+ TAA 	<ul style="list-style-type: none"> 1/10-GE port QSFP+ port
<ul style="list-style-type: none"> HP 5920AF-24XG HP 5920AF-24XG TAA 	SFP+ port

You can bind several ports of the same type to an IRF port for increased bandwidth and availability.

1/10-GE ports and SFP+ ports are grouped as follows. When a 1/10-GE port or SFP+ port is bound to an IRF port, the other ports in the same group will not be used as a service port, and vice versa.

- On the HP 5920AF-24XG, 5920AF-24XG TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+8Gb FC B-F, 5900AF-48XG-4QSFP+, and 5900AF-48XG-4QSFP+ TAA switches, the SFP+ ports are grouped by port number in ascending order, starting from one. Every four SFP+ ports form one group.

- On the HP 5900AF-48G-4XG-2QSFP+ and 5900AF-48G-4XG-2QSFP+ TAA switches, SFP+ ports numbered 49, 50, 51, and 52 form one group.
- On the HP 5900AF-48XGT-4QSFP+ and HP 5900AF-48XGT-4QSFP+ TAA switches, the 1/10-GE ports are grouped by port number in ascending order, starting from one. Every four 1/10-GE ports form one group.

A common practice is to use one 1/10-GE port or SFP+ port group for IRF connections, and bind every two 1/10-GE port or SFP+ ports in the group to an IRF port for increased bandwidth and availability.

Planning the cabling scheme

Follow the cabling schemes described in [Table 9](#) to connect IRF member switches.

Table 9 Cabling schemes

Switch model	Cabling scheme	Remarks
<ul style="list-style-type: none"> • HP 5920AF-24XG • HP 5920AF-24XG TAA • HP 5900AF-48XG-4QSFP+ • HP 5900AF-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+ • HP 5900CP-48XG-4QSFP+ TAA • HP 5900CP-48XG-4QSFP+8Gb FC B-F • HP 5900AF-48G-4XG-2QSFP+ • HP 5900AF-48G-4XG-2QSFP+ TAA 	<ul style="list-style-type: none"> • SFP+/QSFP+ DAC cables • SFP+/QSFP+ transceiver modules and fibers 	<p>If the IRF member switches are far away from one another, choose the SFP+/QSFP+ transceiver modules with optical fibers. If the IRF member switches are all in one equipment room, choose twisted pair/SFP+/QSFP+ DAC cables. For more information about available SFP+/QSFP+ DAC cables and transceiver modules, see "SFP+ port" and "QSFP+ port."</p>
<ul style="list-style-type: none"> • HP 5900AF-48XGT-4QSFP+ • HP 5900AF-48XGT-4QSFP+ TAA 	<ul style="list-style-type: none"> • Twisted pair cables • QSFP+ DAC cables • QSFP+ transceiver modules and fibers 	

The following subsections describe several HP recommended IRF connection schemes, and all these schemes use a ring topology.

Connecting the IRF member switches in one rack

Use SFP+ DAC cables to connect the IRF member switches (four switches in this example) in a rack as shown in [Figure 30](#). The switches in the ring topology (as shown in [Figure 31](#)) are in the same order as connected in the rack.

Figure 30 Connecting the switches in one rack

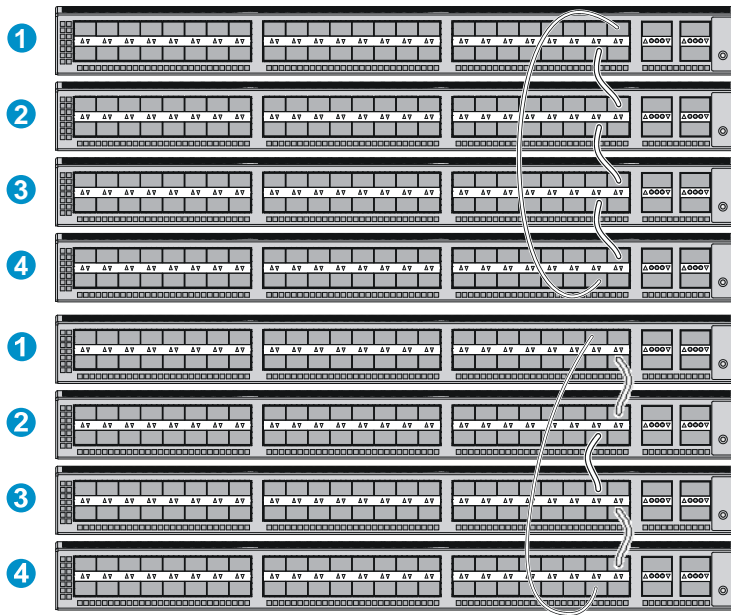
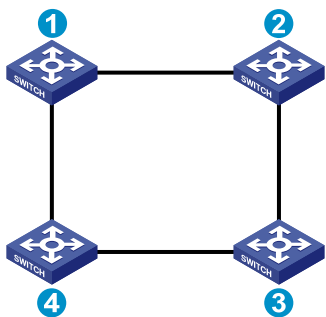


Figure 31 IRF fabric topology

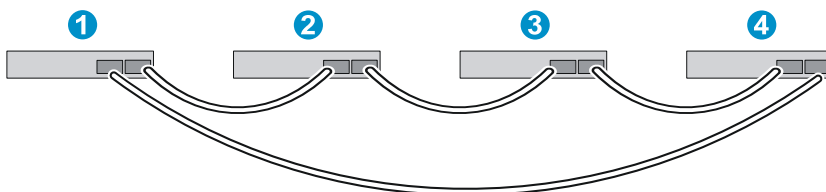


Connecting the IRF member switches in a ToR solution

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

Figure 32 shows an example for connecting four top of rack IRF member switches by using SFP+/QSFP+ DAC cables, and SFP+/QSFP+ transceiver modules, and optical fibers. The topology is the same as Figure 31.

Figure 32 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 to configure their member IDs, member priorities, and IRF port bindings. For more information, see *HP 5920 & 5900 Switch Series Fundamentals Configuration Guide*.

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.
- Execute the **display irf configuration** command to verify the basic IRF settings.

For more information about configuring basic IRF settings, see *HP 5920 & 5900 Switch Series IRF Configuration Guide*.

Connecting the physical IRF ports

Use SFP+/QSFP+ DAC cables or SFP+/QSFP+ transceiver modules and fibers to connect the IRF member switches as planned.

NOTE:

Wear an ESD wrist strap when you connect SFP+ DAC cables or SFP+ transceiver modules and fibers. For how to connect them, see *SFP/SFP+/XFP Transceiver Modules Installation Guide* and *QSFP+ Transceiver Modules/Cables Installation Guide*.

Accessing the IRF fabric to verify the configuration

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

1. Log in to the IRF fabric through the console port of any member switch.
2. Create a Layer 3 interface, assign it an IP address, and make sure 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 *HP 5920 & 5900 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 Display and maintain IRF configuration and running status

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

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 *HP 5920 & 5900 Switch Series IRF Configuration Guide*.

Maintenance and troubleshooting

Power supply failure

You can use the LEDs on the power supply to identify a power supply failure. For more information about the LEDs on a power supply, see *HP A58x0AF 650W AC (JC680A) & 650W DC (JC681A) Power Supplies User Guide*.

If the LEDs on the power supply are not steady green (active) or blinking green (standby), the power supply is faulty.

To resolve the problem:

1. Verify that the power cord is connected securely.
2. Verify that the power source meets the requirement.
3. Verify that the temperature of the switch is in the normal range and the power supply has good ventilation.
4. If the problem persists, contact HP Support.

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

Fan tray failure

CAUTION:

- If one fan tray fails, perform the following tasks:
 - Finish replacing the fan tray within 24 hours and do not remove the failed fan tray before replacement when the ambient temperature is below 27°C (80.6°F).
 - Replace the fan tray immediately when the ambient temperature is above 27°C (80.6°F).
- If both fan trays fail, finish replacing the fan trays within 2 minutes.

When a fan tray has problems, the system status LED is steady red and the system outputs alarm messages.

To replace a failed fan tray, see "[Installing/removing a fan tray](#)."

Configuration terminal problems

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

No display on the configuration terminal

The configuration terminal has no display when the switch is powered on.

To resolve the problem:

1. Verify that the power system is operating correctly.
2. Verify that the switch is operating correctly.
3. Verify that the console cable has been connected correctly.
4. Verify that the following settings are configured for the terminal:
 - **Baud rate**—9600.
 - **Data bits**—8.
 - **Parity**—None.
 - **Stop bits**—1.
 - **Flow control**—None.
5. Verify that the console cable is not faulty.
6. If the problem persists, contact HP support.

Garbled display on the configuration terminal

The configuration terminal displays garbled text.

To resolve the problem:

1. Verify that the following settings are configured for the terminal:
 - **Baud rate**—9600.
 - **Data bits**—8.
 - **Parity**—None.
 - **Stop bits**—1.
 - **Flow control**—None.
2. If the problem persists, contact HP Support.

Appendix A Chassis views and technical specifications

Chassis views

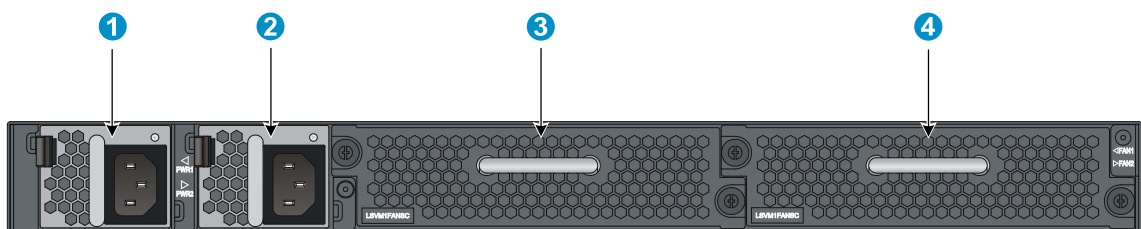
HP 5920AF-24XG/HP 5920AF-24XG TAA

Figure 33 Front panel



- | | |
|---|--|
| (1) SFP+ port | (2) SFP+ port LED |
| (3) Management Ethernet port | (4) Console port |
| (5) System status LED (SYS) | (6) ACT LED for the management Ethernet port |
| (7) LINK LED for the management Ethernet port | |

Figure 34 Rear panel

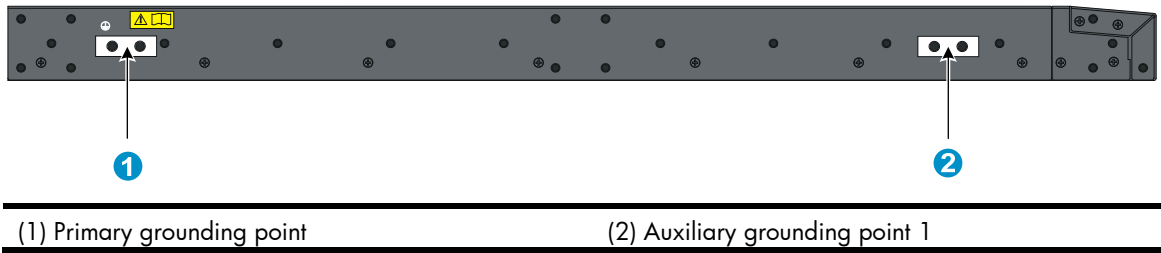


- | | |
|-------------------------|-------------------------|
| (1) Power supply slot 1 | (2) Power supply slot 2 |
| (3) Fan tray slot 1 | (4) Fan tray slot 2 |

The HP 5920AF-24XG and 5920AF-24XG TAA switches come with the power supply slots empty and the filler modules for the slots as accessories. You can install one or two power supplies for the switch as needed. In this figure, two 650W AC power supplies are installed. For more information about installing and removing the power supply, see "[Installing/removing a power supply.](#)"

The HP 5920AF-24XG and 5920AF-24XG TAA switches also come with the fan tray slots empty. You must install two fan trays for the 5920AF-24XG and 5920AF-24XG TAA for adequate heat dissipation, and their models must be the same. In this figure, two LSM1FANSC fan trays are installed. For more information about installing and removing the fan tray, see "[Installing/removing a fan tray.](#)"

Figure 35 Left side panel

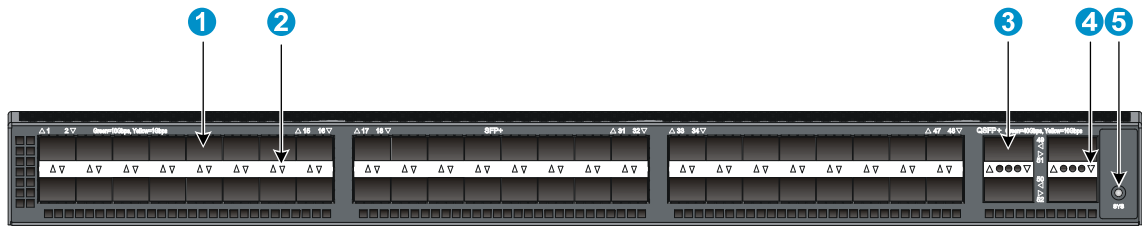


(1) Primary grounding point

(2) Auxiliary grounding point 1

HP 5900AF-48XG-4QSFP+/HP 5900AF-48XG-4QSFP+ TAA/HP 5900CP-48XG-4QSFP+/HP 5900CP-48XG-4QSFP+ TAA/HP 5900CP-48XG-4QSFP+8Gb FC B-F

Figure 36 Front panel



(1) SFP+ port

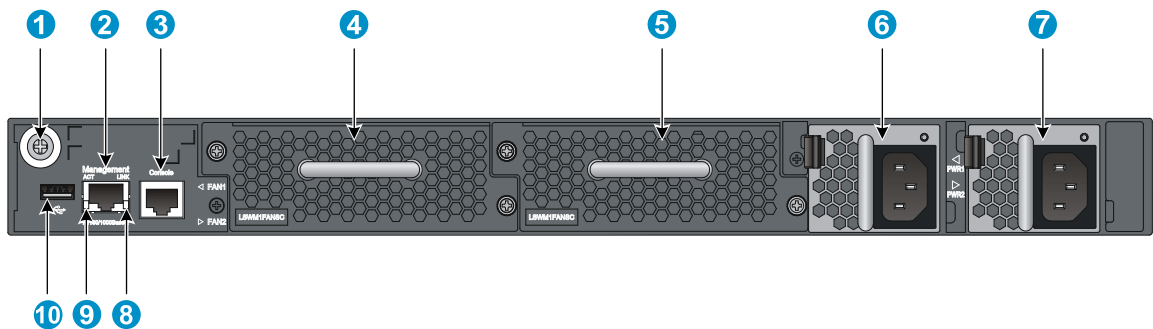
(2) SFP+ port LED

(3) QSFP+ port

(4) QSFP+ port LED

(5) System status LED (SYS)

Figure 37 Rear panel



(1) Grounding screw (auxiliary grounding point 2) (2) Management Ethernet port

(3) Console port

(4) Fan tray slot 1

(5) Fan tray slot 2

(6) Power supply slot 1

(7) Power supply slot 2

(8) LINK LED for the management Ethernet port

(9) ACT LED for the management Ethernet port

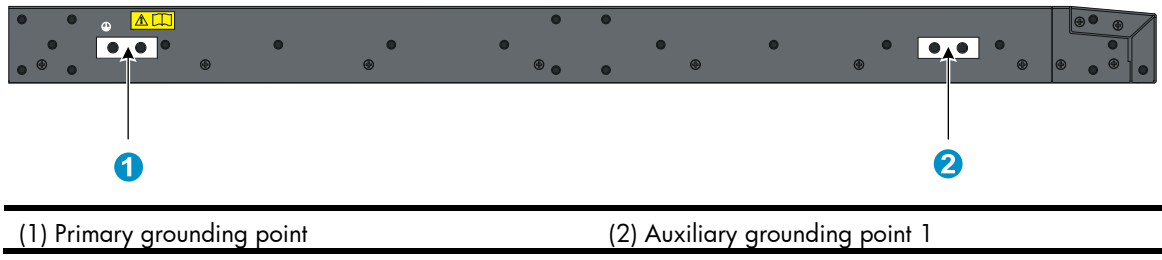
(10) USB port

The HP 5900AF-48XG-4QSFP+, 5900AF-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, and 5900CP-48XG-4QSFP+8Gb FC B-F switches come with the power supply slots empty and the filler modules for the slots as accessories. You can install one or two power

supplies for the switch as needed. In this figure, two 650W AC power supplies are installed. For more information about installing and removing the power supply, see "[Installing/removing a power supply.](#)"

The HP 5900AF-48XG-4QSFP+, 5900AF-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, and 5900CP-48XG-4QSFP+8Gb FC B-F switches also come with the fan tray slots empty. You must install two fan trays for the HP 5900AF-48XG-4QSFP+, 5900AF-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, and 5900CP-48XG-4QSFP+8Gb FC B-F for adequate heat dissipation, and their models must be the same. In this figure, two LSWM1FANSC fan trays are installed. For more information about installing and removing the fan tray, see "[Installing/removing a fan tray.](#)"

Figure 38 Left side panel



HP 5900AF-48XGT-4QSFP+/HP 5900AF-48XGT-4QSFP+ TAA

Figure 39 Front panel

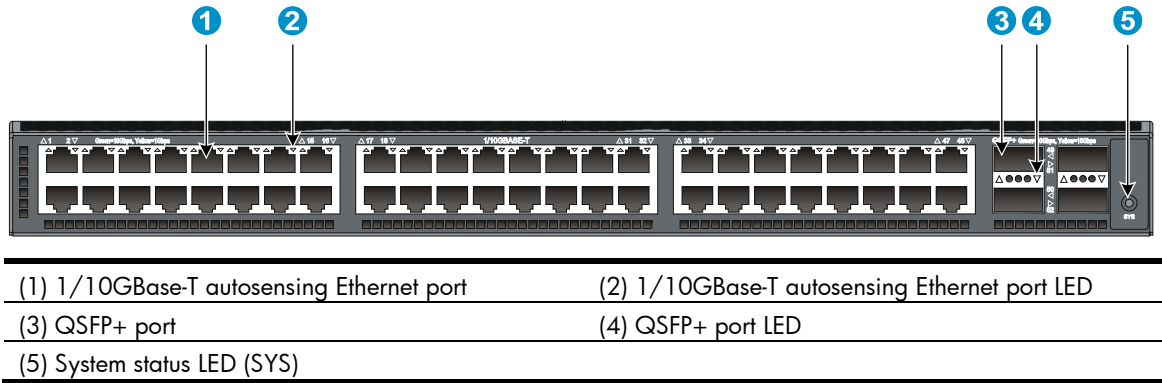
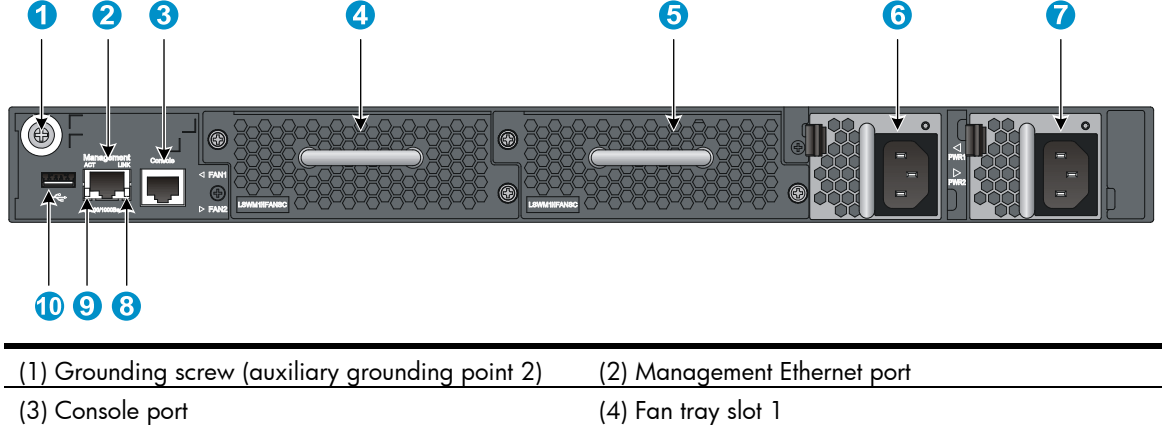


Figure 40 Rear panel

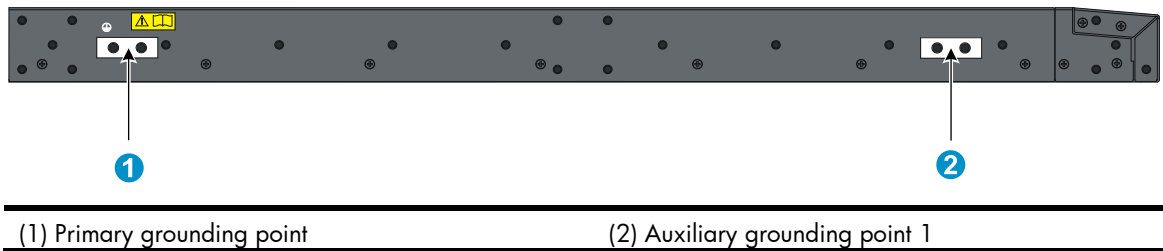


(5) Fan tray slot 2	(6) Power module slot 1
(7) Power module slot 2	(8) LINK LED for the management Ethernet port
(9) ACT LED for the management Ethernet port	(10) USB port

The HP 5900AF-48XGT-4QSFP+ and HP 5900AF-48XGT-4QSFP+ TAA switches come with the power supply slots empty and the filler modules for the slots as accessories. You can install one or two power supplies for the switch as needed. In Figure 43, two 650W AC power supplies are installed. For more information about installing and removing the power supply, see "Installing/removing a power supply."

The HP 5900AF-48XGT-4QSFP+ and HP 5900AF-48XGT-4QSFP+ TAA switches also come with the fan tray slots empty. You must install two fan trays for the HP 5900AF-48XGT-4QSFP+ and 5900AF-48XGT-4QSFP+ TAA switches for adequate heat dissipation, and their models must be the same. In Figure 43, two LSWM1HFANSC fan trays are installed. For more information about installing and removing the fan tray, see "Installing/removing a fan tray."

Figure 41 Left side panel



HP 5900AF-48G-4XG-2QSFP+/HP 5900AF-48G-4XG-2QSFP+ TAA

Figure 42 Front panel

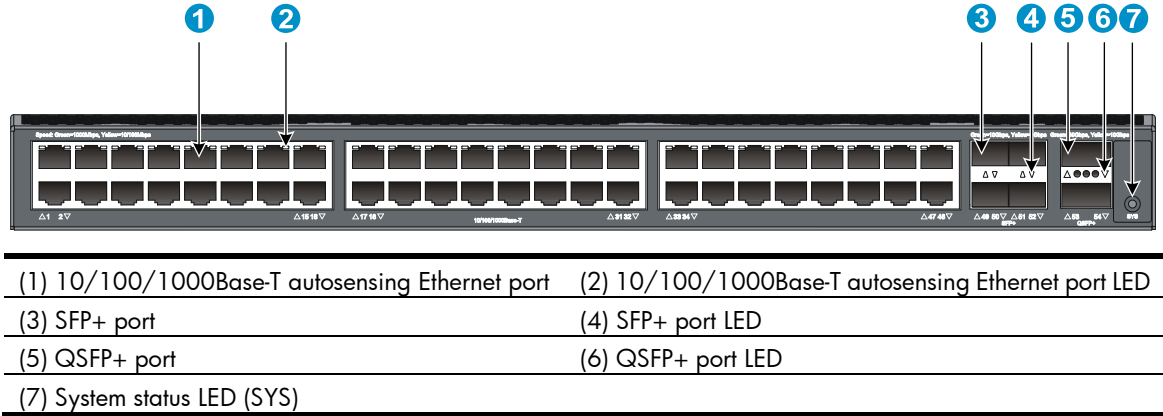
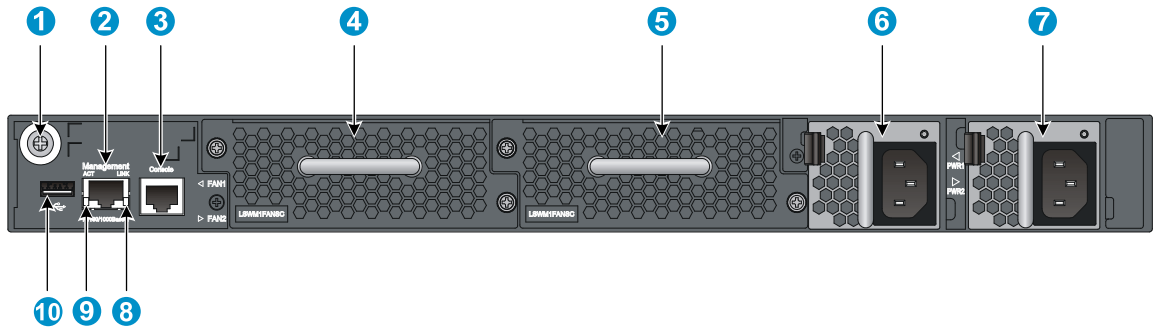


Figure 43 Rear panel

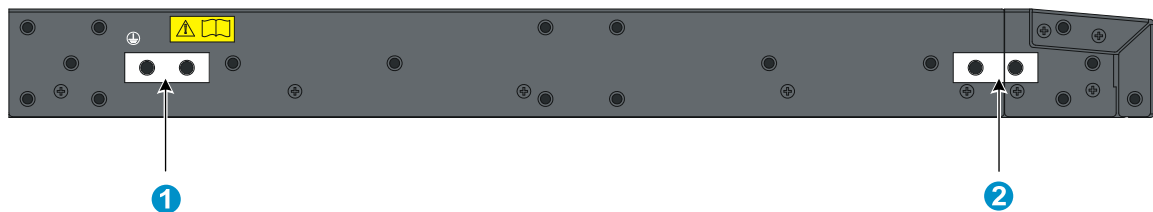


(1) Grounding screw (auxiliary grounding point 2)	(2) Management Ethernet port
(3) Console port	(4) Fan tray slot 1
(5) Fan tray slot 2	(6) Power supply slot 1
(7) Power supply slot 2	(8) LINK LED for the management Ethernet port
(9) ACT LED for the management Ethernet port	(10) USB port

The HP 5900AF-48G-4XG-2QSFP+ and 5900AF-48G-4XG-2QSFP+ TAA switches come with the power supply slots empty and the filler modules for the slots as accessories. You can install one or two power supplies for the switch as needed. In [Figure 43](#), two 650W AC power supplies are installed. For more information about installing and removing the power supply, see "[Installing/removing a power supply](#)."

The HP 5900AF-48G-4XG-2QSFP+ and 5900AF-48G-4XG-2QSFP+ TAA switches also come with the fan tray slots empty. You must install two fan trays for the HP 5900AF-48G-4XG-2QSFP+ and 5900AF-48G-4XG-2QSFP+ TAA switches for adequate heat dissipation, and their models must be the same. In [Figure 43](#), two LSWM1FANSC fan trays are installed. For more information about installing and removing the fan tray, see "[Installing/removing a fan tray](#)."

Figure 44 Left side panel



(1) Primary grounding point	(2) Auxiliary grounding point 1
-----------------------------	---------------------------------

Technical specifications

Item	HP 5920AF-24XG/HP 5920AF-24XG TAA	HP 5900AF-48XG-4Q SFP+/HP 5900AF-48XG-4Q SFP+ TAA/HP 5900CP-48XG-4Q SFP+/ HP 5900CP-48XG-4Q SFP+ TAA/HP 5900CP-48XG-4Q SFP+8Gb FC B-F	HP 5900AF-48G-4XG -2QSFP+/HP 5900AF-48G-4XG -2QSFP+ TAA	HP 5900AF-48XGT-4 QSFP+/HP 5900AF-48XGT-4 QSFP+ TAA
Dimensions (H × W × D)	43.6 × 440 × 700 mm (1.72 × 17.32 × 27.56 in)	43.6 × 440 × 660 mm (1.72 × 17.32 × 25.98 in)	43.6 × 440 × 460 mm (1.72 × 17.32 × 18.11 in)	43.6 × 440 × 660 mm (1.72 × 17.32 × 25.98 in)
Weight	≤ 13.5 kg (29.76 lb)	≤ 13 kg (28.66 lb)	≤ 10 kg (22.05 lb)	≤ 13 kg (28.66 lb)
Console ports	1	1	1	1
Management Ethernet ports	1	1	1	1
USB ports	N/A	1	1	1
SFP+ ports	24	48	4	N/A
QSFP+ ports	N/A	4	2	4
10/100/100 OBase-T autosensing Ethernet ports	N/A	N/A	48	N/A
1/10GBase-T autosensing Ethernet ports	N/A	N/A	N/A	48
Fan tray slots	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel
Power supply slots	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel	2, hot swappable, on the rear panel
AC-input voltage	<ul style="list-style-type: none"> Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz 	<ul style="list-style-type: none"> Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz 	<ul style="list-style-type: none"> Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz 	<ul style="list-style-type: none"> Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz

Item	HP 5920AF-24XG/HP 5920AF-24XG TAA	HP 5900AF-48XG-4Q SFP+/HP 5900AF-48XG-4Q SFP+ TAA/HP 5900CP-48XG-4Q SFP+/ HP 5900CP-48XG-4Q SFP+ TAA/HP 5900CP-48XG-4Q SFP+8Gb FC B-F	HP 5900AF-48G-4XG -2QSFP+/HP 5900AF-48G-4XG -2QSFP+ TAA	HP 5900AF-48XGT-4 QSFP+/HP 5900AF-48XGT-4 QSFP+ TAA
DC-input voltage	<ul style="list-style-type: none"> Rated voltage: -40 VDC to -60 VDC Max voltage: -40 VDC to -72 VDC 	<ul style="list-style-type: none"> Rated voltage: -40 VDC to -60 VDC Max voltage: -40 VDC to -72 VDC 	<ul style="list-style-type: none"> Rated voltage: -40 VDC to -60 VDC Max voltage: -40 VDC to -72 VDC 	<ul style="list-style-type: none"> Rated voltage: -40 VDC to -60 VDC Max voltage: -40 VDC to -72 VDC
Minimum power consumption	<ul style="list-style-type: none"> Single AC input: 334 W Dual AC inputs: 343 W Single DC input: 333 W Dual DC inputs: 339 W 	<ul style="list-style-type: none"> Single AC input: 183 W Dual AC inputs: 200 W Single DC input: 182 W Dual DC inputs: 197 W 	<ul style="list-style-type: none"> Single AC input: 98 W Dual AC inputs: 115 W Single DC input: 95 W Dual DC inputs: 110 W 	<ul style="list-style-type: none"> Single AC input: 124 W Dual AC inputs: 139 W Single DC input: 121 W Dual DC inputs: 133 W
Maximum power consumption	<ul style="list-style-type: none"> Single AC input: 357 W Dual AC inputs: 366 W Single DC input: 360 W Dual DC inputs: 366 W 	<ul style="list-style-type: none"> AC: 257 W DC: 250 W 	<ul style="list-style-type: none"> Single AC input: 157 W Dual AC inputs: 175 W Single DC input: 151 W Dual DC inputs: 169 W 	<ul style="list-style-type: none"> Single AC input: 446 W Dual AC inputs: 455 W Single DC input: 444 W Dual DC inputs: 444 W
Chassis leakage current compliance	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943
Melting current of power supply fuse	<ul style="list-style-type: none"> 10 A @ 250 VAC 30 A @ 250 VDC 	<ul style="list-style-type: none"> 10 A @ 250 VAC 30 A @ 250 VDC 	<ul style="list-style-type: none"> 10 A @ 250 VAC 30 A @ 250 VDC 	<ul style="list-style-type: none"> 10 A @ 250 VAC 30 A @ 250 VDC
Operating temperature	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)	0°C to 45°C (32°F to 113°F)
Operating humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Fire resistance compliance	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943 	<ul style="list-style-type: none"> UL60950-1 EN60950-1 IEC60950-1 GB4943

Appendix B FRUs and compatibility matrixes

This appendix describes the field replaceable units (FRUs) available for the HP 5920 and 5900 Switch Series and their compatibility.

All the FRUs in this appendix are hot swappable.

Power supplies

Power supply	Specifications	Switch model	Reference
650W AC power supply	<ul style="list-style-type: none"> Rated input voltage: 100 VAC to 240 VAC @ 50 Hz or 60 Hz Max input voltage: 90 VAC to 264 VAC @ 47 Hz to 63 Hz Max output power: 650 W 	<ul style="list-style-type: none"> HP 5920AF-24XG HP 5920AF-24XG TAA HP 5900AF-48XG-4QSFP+ HP 5900AF-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+ HP 5900CP-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+8Gb FC B-F 	<p>HP A58x0AF 650W AC (JC680A) & 650W DC (JC681A) Power Supplies User Guide</p>
650W DC power supply	<ul style="list-style-type: none"> Rated input voltage: -40 VDC to -60 VDC Max input voltage: -40 VDC to -72 VDC Max output power: 650 W 	<ul style="list-style-type: none"> HP 5900AF-48XGT-4QSFP+ HP 5900AF-48XGT-4QSFP+ TAA HP 5900AF-48G-4XG-2QSFP+ HP 5900AF-48G-4XG-2QSFP+ TAA 	

! IMPORTANT:

- Do not install AC and DC power supplies on the same switch.
- When a switch has two power supplies for redundancy, you can replace a power supply without powering off the switch. Make sure the power supply to be replaced is powered off before you replace it.

Fan trays

Item	Specifications
LSWM1FANSC (for the HP 5900AF-48XG-4QSFP+, 5900AF-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+8Gb FC B-F, 5900AF-48G-4XG-2QSFP+, and 5900AF-48G-4XG-2QSFP+ TAA switches)	
Fans	Two 40 × 40 × 28 mm (1.57 × 1.57 × 1.1 in) fans
Fan speed	18500 R.P.M
Max airflow	45 CFM

Item	Specifications
Airflow direction	Back to front (Fans blow air from the power supply side to the network port side.)
Input voltage	12 V
Maximum power consumption	19.5 W
Documentation reference	<i>HP LSWM1FANSC & LSWM1FANSCB Fan Assemblies Installation</i>
LSWM1FANSCB (for the HP 5900AF-48XG-4QSFP+, 5900AF-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+, 5900CP-48XG-4QSFP+ TAA, 5900CP-48XG-4QSFP+8Gb FC B-F, 5900AF-48G-4XG-2QSFP+, and 5900AF-48G-4XG-2QSFP+ TAA switches)	
Fans	Two 40 × 40 × 28 mm (1.57 × 1.57 × 1.1 in) fans
Fan speed	18500 R.P.M
Max airflow	45 CFM
Airflow direction	Front to back (Fans draw air from the network port side to the power supply side.)
Input voltage	12 V
Maximum power consumption	19.5 W
Documentation reference	<i>HP LSWM1FANSC & LSWM1FANSCB Fan Assemblies Installation</i>
LSWM1HFANSC (for the HP 5900AF-48XGT-4QSFP+ and 5900AF-48XGT-4QSFP+ TAA switches)	
Fans	Two 40 × 40 × 56 mm (1.57 × 1.57 × 2.2 in) fans
Fan speed	21000 R.P.M
Max airflow	70 CFM
Airflow direction	Back to front (Fans draw air from the power module side to the network port side.)
Input voltage	12 V
Maximum power consumption	60 W
Documentation reference	<i>HP LSWM1HFANSC & LSWM1HFANSCB Installation Manual</i>
LSWM1HFANSCB (for the HP 5900AF-48XGT-4QSFP+ and 5900AF-48XGT-4QSFP+ TAA switches)	
Fans	Two 40 × 40 × 56 mm (1.57 × 1.57 × 2.2 in) fans
Fan speed	21000 R.P.M
Max airflow	70 CFM
Airflow direction	Front to back (Fans draw air from the network port side to the power module side.)
Input voltage	12 V
Maximum power consumption	60 W
Documentation reference	<i>HP LSWM1HFANSC & LSWM1HFANSCB Installation Manual</i>
LSVM1FANSC (for the HP 5920AF-24XG and 5920AF-24XG TAA switches)	
Fans	Three 40 × 40 × 28 mm (1.57 × 1.57 × 1.1 in) fans

Item	Specifications
Fan speed	18500 R.P.M
Max airflow	57 CFM
Airflow direction	Back to front (Fans blow air from the power supply side to the network port side.)
Input voltage	12 V
Maximum power consumption	22.7 W
Documentation reference	<i>HP LSVM1FANSC & LSVM1FANSCB Fan Assemblies Installation Manual</i>
LSVM1FANSCB (for the HP 5920AF-24XG and 5920AF-24XG TAA switches)	
Fans	Three 40 × 40 × 28 mm (1.57 × 1.57 × 1.1 in) fans
Fan speed	18500 R.P.M
Max airflow	57 CFM
Airflow direction	Front to back (Fans draw air from the network port side to the power supply side.)
Input voltage	12 V
Maximum power consumption	22.7 W
Documentation reference	<i>HP LSVM1FANSC & LSVM1FANSCB Fan Assemblies Installation Manual</i>

Appendix C Ports and LEDs

Ports

Console port

The switch has one console port.

Table 11 Console port specifications

Item	Specification
Connector type	RJ-45
Compliant standard	EIA/TIA-232
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 or remote (through a pair of modems) PC running terminal emulation program.

Management Ethernet port

The switch has one management Ethernet port. You can connect this port to a PC or management station for loading and debugging software or remote management.

Table 12 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

Every HP 5900 switch has one OHC-compliant USB2.0 port that can upload and download data at a rate up to 12 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 compatibility and driver. HP does not guarantee correct operation of USB devices from other vendors on the switch. If a USB device does not operate correctly on the switch, replace it with one from another vendor.

SFP+ port

The following switches provide SFP+ ports:

- HP 5920AF-24XG.
- HP 5920AF-24XG TAA.
- HP 5900AF-48XG-4QSFP+.
- HP 5900AF-48XG-4QSFP+ TAA.
- HP 5900CP-48XG-4QSFP+.
- HP 5900CP-48XG-4QSFP+ TAA.
- HP 5900CP-48XG-4QSFP+8Gb FC B-F.
- HP 5900AF-48G-4XG-2QSFP+.
- HP 5900AF-48G-4XG-2QSFP+ TAA.

You can install the 1000 Mbps SFP transceiver modules in [Table 13](#), the SFP+ transceiver modules in [Table 14](#), and the SFP+ DAC cables in [Table 15](#) in the SFP+ ports as needed. You can use the SFP+ ports as IRF physical ports to connect the switches in an IRF deployment.

Table 13 1000 Mbps SFP transceiver modules available for the SFP+ ports

Product Code	HP description	Central wavelength (nm)	Connector	Cable/fiber diameter (μm)	Modal bandwidth (MHz × km)	Max transmission distance
JD089B	HP X120 1G SFP RJ45 T Transceiver	N/A	RJ-45	Category-5 twisted pair	N/A	100 m (328.08 ft)
JD118B	HP X120 1G SFP LC SX Transceiver	850	LC	Multi-mode, 50/125	500	550 m (1804.46 ft)
					400	500 m (1640.42 ft)
				Multi-mode, 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	Single-mode, 9/125	N/A	10 km (6.21 miles)
				Multi-mode, 50/125	• 500	550 m (1804.46 ft)
					• 400	
Multi-mode, 62.5/125	500	550 m (1804.46 ft)				

Product Code	HP description	Central wavelength (nm)	Connector	Cable/fiber diameter (μm)	Modal bandwidth (MHz × km)	Max transmission distance
JD061A	HP X125 1G SFP LC LH40 1310nm Transceiver	1310	LC	Single-mode, 9/125	N/A	40 km (24.86 miles)
JD062A	HP X120 1G SFP LC LH40 1550nm Transceiver	1550	LC	Single-mode, 9/125	N/A	40 km (24.86 miles)
JD063B	HP X125 1G SFP LC LH70 Transceiver	1550	LC	Single-mode, 9/125	N/A	70 km (43.50 miles)

Table 14 10 G SFP+ transceiver modules available for the SFP+ ports

Product Code	HP description	Central wavelength (nm)	Connector	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)
					200	33 m (108.27 ft)
					160	26 m (85.3 ft.)
JD093B	HP X130 10G SFP+ LC LRM Transceiver	1310	LC	Multi-mode, 50/125	<ul style="list-style-type: none"> • 1500 • 500 	220 m (721.78 ft)
					400	100 m (328.08 ft)
					200	220 m (721.78 ft)
					160	220 m (721.78 ft)
JD094B	HP X130 10G SFP+ LC LR Transceiver	1310	LC	Single-mode, 9/125	N/A	10 km (6.21 miles)

Table 15 SFP+ DAC cables available for the SFP+ ports

Product code	HP description	Max transmission distance
JD095C	HP X240 10G SFP+ SFP+ 0.65m DA Cable	0.65 m (2.13 ft)

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

Figure 45 SFP+ DAC cable



(1) Connector

(2) Pull latch

For more information about the SFP transceiver modules, SFP+ transceiver modules, and SFP+ DAC cables, see *HP Comware-Based Devices Transceiver Modules User Guide*

NOTE:

- HP recommends that you use HP 1000 Mbps SFP transceiver modules, SFP+ transceiver modules, or SFP+ DAC cables for the SFP+ ports on the switch. The HP SFP and SFP+ transceiver modules and SFP+ DAC cables are subject to change over time. For the most up-to-date list of SFP and SFP+ transceiver modules and SFP+ DAC cables, contact your HP sales representative or technical support engineer.
- The HP 5900AF-48G-4XG-2QSFP+ and HP 5900AF-48G-4XG-2QSFP+ TAA switches do not support the SFP-XG-LX220-MM1310 transceiver module.

QSFP+ port

HP 5900 switches provide QSFP+ ports. You can plug the QSFP+ transceiver modules in [Table 16](#) and the QSFP+ DAC cables in [Table 17](#) in the QSFP+ ports as needed.

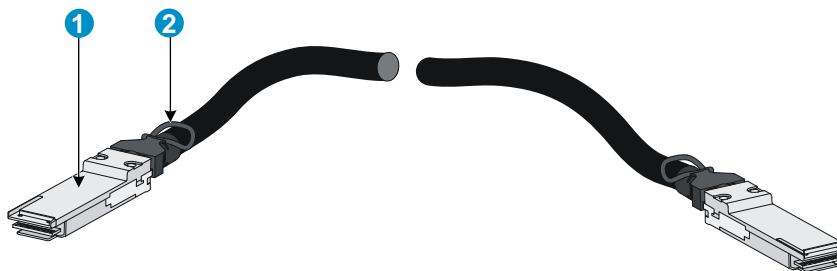
Table 16 40G QSFP+ transceiver modules available for the HP 5900 switches

Product Code	HP description	Central wavelength (nm)	Connector	Fiber diameter (μm)	Modal bandwidth (MHz × km)	Max transmission distance
JG325B	HP X140 40G QSFP+ MPO SR4 Transceiver	850	MPO	Multi-mode, 50/125	2000	100 m (328.08 ft)
					4700	150 m (492.12 ft)
JG709A	HP X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	850	MPO	Multi-mode, 50/125	2000	300 m (984.25 ft)
					4700	400 m (1312.33 ft)
JG661A	HP X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver Module	Four lanes: • 1271 • 1291 • 1311 • 1331	LC	Single-mode, 9/125	N/A	10 km (6.21 miles)

Table 17 40G QSFP+ DAC cables available for the HP 5900 switches

Product code	HP description	Max transmission distance
JG326A	HP X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	1 m (3.28 ft)
JG327A	HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	3 m (9.84 ft)
JG328A	HP X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	5 m (16.40 ft)
JG329A	HP X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	1 m (3.28 ft)
JG330A	HP X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	3 m (9.84 ft)
JG331A	HP X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	5 m (16.40 ft)

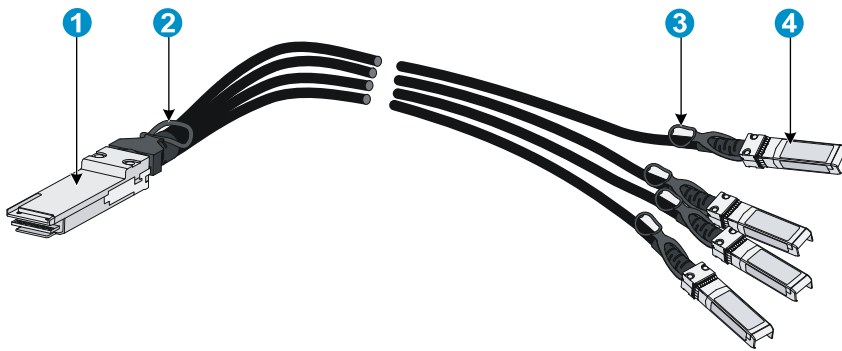
Figure 46 40G QSFP+ DAC cable



(1) Connector

(2) Pull latch

Figure 47 40G QSFP+ to 4 x 10G SFP+ DAC cable



(1) QSFP+ module	(2) QSFP+ side pull latch
(3) SFP+ side pull latch	(4) SFP+ module

For more information about the QSFP+ transceiver module and QSFP+ DAC cables, see *HP Comware-Based Devices Transceiver Modules User Guide*.

NOTE:

- HP recommends that you use QSFP+ transceiver modules or QSFP+ DAC cables for the QSFP+ ports on the switch. The HP QSFP+ transceiver modules and QSFP+ DAC cables are subject to change over time. For the most up-to-date list of HP QSFP+ transceiver modules and QSFP+ DAC cables, contact your HP sales representative or technical support engineer.
- You can use an HP X140 40G QSFP+ MPO SR4 transceiver (JG325B) or HP X140 40G QSFP+ MPO MM 850nm CSR4 300m transceiver (JG709A) to connect a QSFP+ port to four SFP+ ports. The QSFP+ transceiver module and SFP+ transceiver modules to be connected must be the same in specifications, including central wavelength and fiber type.

10/100/1000Base-T autosensing Ethernet port

The HP 5900AF-48G-4XG-2QSFP+ and HP 5900AF-48G-4XG-2QSFP+ TAA switches have 10/100/1000Base-T autosensing Ethernet ports.

Table 18 10/100/1000Base-T autosensing Ethernet port specifications

Item	Specification
Connector type	RJ-45
Port transmission rate	10/100/1000 Mbps, half/full duplex, MDI/MDI-X autosensing
Transmission medium and max transmission distance	100 m (328.08 ft) over category-5 twisted pair cable
Compatible standards	<ul style="list-style-type: none"> • IEEE 802.3i • IEEE 802.3u • IEEE 802.3ab

1/10GBase-T autosensing Ethernet port

The HP 5900AF-48XGT-4QSFP+ and HP 5900AF-48XGT-4QSFP+ TAA switches have 1/10GBase-T autosensing Ethernet ports.

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

Item	Specification
Connector type	RJ-45
Port transmission rate	1/10 Gbps, full duplex, MDI/MDI-X autosensing
Transmission medium and max transmission distance	<ul style="list-style-type: none">• 55 m (180.45 ft) over category-6 unshielded twisted pair cable• 100 m (328.08 ft) over category-6 shielded twisted pair cable• 100 m (328.08 ft) over category-6A or above twisted pair cable
Compatible standards	<ul style="list-style-type: none">• IEEE 802.3ab• IEEE 802.3an

To avoid interference between cables, HP recommends that you layer cables as follows:

- Use category-6A or above twisted pair cables and connectors.
- Do not bundle cables in their first 20 m (65.62 ft).
- Separate power cables 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, port 2 on the device to port 3 on the distribution frame, and port 3 on the device to port 5 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, port 2 on the device to port 1 on distribution frame 2, and port 3 on the device to port 2 on distribution frame 1.

LEDs

System status LED

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

Table 20 System status LED description

LED mark	Status	Description
SYS	Steady green	The switch is operating correctly.
	Flashing green	The switch is performing power-on self test (POST).
	Steady red	The system has failed to pass POST or has problems such as fan failure.
	Flashing red	Some ports have failed to pass POST.
	Off	The switch is powered off or has failed to start up.

SFP+ port LED

Each SFP+ port has a status LED to show port operating status and activities.

Table 21 SFP+ port LED description

Transmission technology	LED status	Description
Ethernet	Steady green	A transceiver module or cable has been correctly installed. The port has a link and is operating at 10 Gbps.
	Flashing green	The port is sending or receiving data at 10 Gbps.
	Steady yellow	A transceiver module or cable has been correctly installed. The port has a link and is operating at 1 Gbps.
	Flashing yellow	The port is sending or receiving data at 1 Gbps.
	Off	No transceiver module or cable has been installed or no link is present on the port.
	Flashing yellow	The port is sending or receiving data at 2 Gbps or 4 Gbps.
	Off	No transceiver module or cable has been installed or no link is present on the port.

QSFP+ port LED

Each QSFP+ port has a status LED to show port operating status and activities.

Table 22 QSFP+ port LED description

LED status	Description
Steady green	A transceiver module or cable has been correctly installed. The port has a link and is operating at 40 Gbps.
Flashing green	The port is sending or receiving data at 40 Gbps.
Steady yellow	A transceiver module or cable has been correctly installed. The port has a link and is operating at 10 Gbps.
Flashing yellow	The port is sending or receiving data at 10 Gbps.
Off	No transceiver module or cable has been installed or no link is present on the port.

Management Ethernet port LEDs

A management Ethernet port has one LINK LED and one ACT LED to show its link and data transmission status.

Table 23 Management Ethernet port LEDs description

LED mark	Status	Description
LINK	Off	The management Ethernet port is not connected.
	Steady green	The management Ethernet port is operating at 10/100/1000 Mbps.
ACT	Off	The management Ethernet port is not receiving or sending data.
	Flashing yellow	The management Ethernet port is sending or receiving data.

10/100/1000Base-T autosensing Ethernet port LEDs

Table 24 10/100/1000Base-T autosensing Ethernet port LED description

Status	Description
Steady green	The port has a link and is operating at 1000 Mbps.
Flashing green	The port is sending or receiving data at 1000 Mbps.
Steady yellow	The port has a link and 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.

1/10GBase-T autosensing Ethernet port LEDs

Table 25 1/10GBase-T autosensing Ethernet port LED description

Status	Description
Steady green	The port has a link and is operating at 10 Gbps.
Flashing green	The port is sending or receiving data at 10 Gbps.
Steady yellow	The port has a link and 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.

Appendix D Cooling system

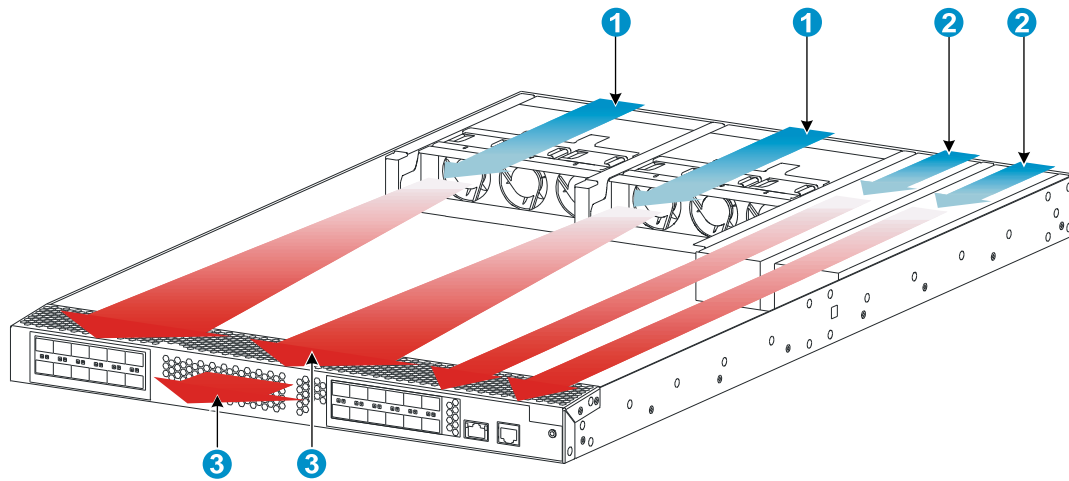
The cooling system of the switch includes the ventilation holes in the chassis, fan trays, and built-in fans of power supplies. To guarantee that this cooling system can effectively work, you must consider the site ventilation design when you plan the installation site for the switches.

HP 5920 cooling system

The fan trays in the HP 5920AF-24XG and 5920AF-24XG TAA switches must be the same type: LSVM1FANSC or LSVM1FANSCB.

- When LSVM1FANSC fan trays are used, cool air flows in through the air vents in the fan tray panel and the power supply panels, circulates through the chassis and the power supplies, and exhausts at the network port side, as shown in [Figure 48](#).
- When LSVM1FANSCB fan trays are used, cool air flows in through the air vents in the network port-side panel and the power supply panels, circulates through the chassis and the power supplies, and exhausts through the air vents in the fan tray panels, as shown in [Figure 49](#).

Figure 48 Airflow through the chassis (with LSVM1FANSC fan trays)

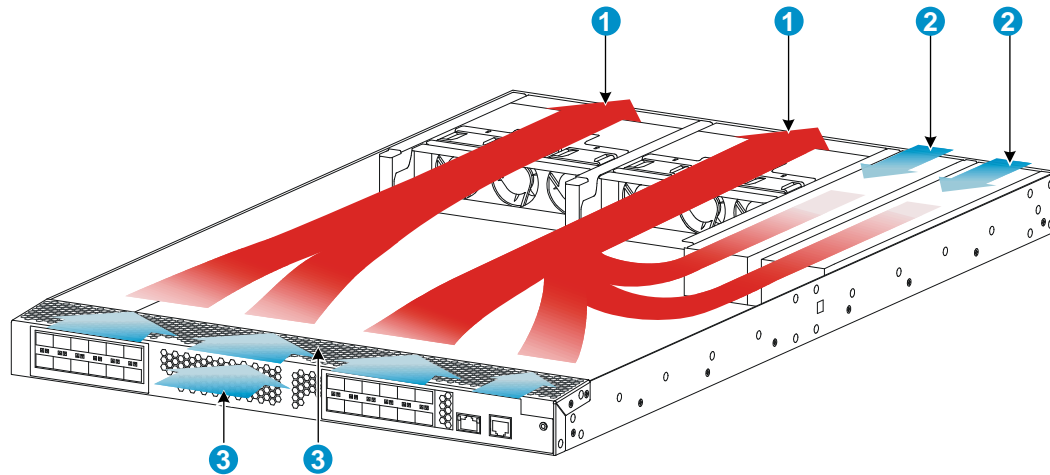


(1) Fan tray air vents

(2) Power supply air vents

(3) Network port-side air vents

Figure 49 Airflow through the chassis (with LSVM1FANSCB fan trays)



(1) Fan tray air vents

(2) Power supply air vents

(3) Network port-side air vents

! IMPORTANT:

The chassis and the power supplies use separate air aisles. Make sure both aisles are not blocked.

HP 5900 cooling system

Table 26 describes fan trays available for the HP 5900 switches.

Table 26 Compatibility matrix between the HP 5900 switch models and fan trays

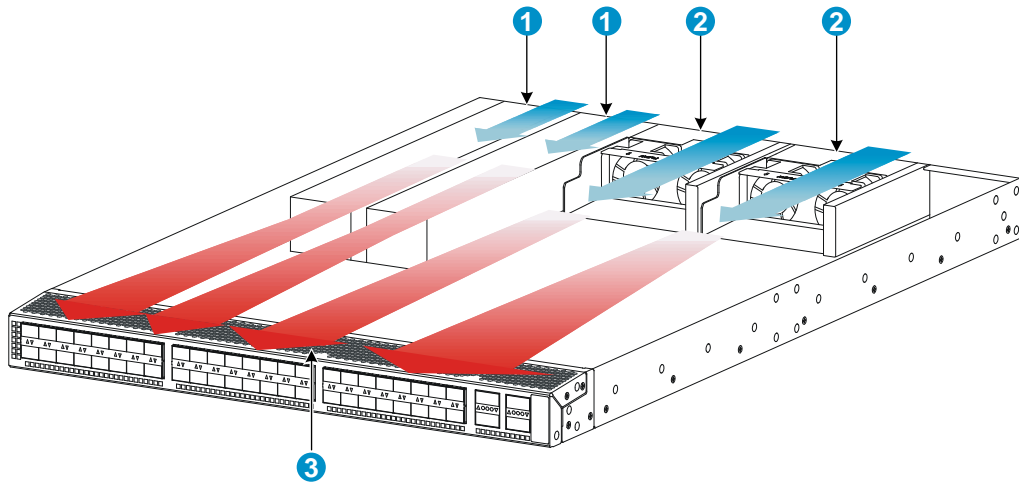
Fan tray	HP 5900 switch model	
<ul style="list-style-type: none"> LSWM1FANSC LSWM1FANSCB 	<ul style="list-style-type: none"> HP 5900AF-48XG-4QSFP+ HP 5900AF-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+ HP 5900CP-48XG-4QSFP+ TAA HP 5900CP-48XG-4QSFP+8Gb FC B-F 	
	<ul style="list-style-type: none"> HP 5900AF-48G-4XG-2QSFP+ HP 5900AF-48G-4XG-2QSFP+ TAA 	
	<ul style="list-style-type: none"> LSWM1HFANSC LSWM1HFANSCB 	<ul style="list-style-type: none"> HP 5900AF-48XGT-4QSFP+ HP 5900AF-48XGT-4QSFP+ TAA

You must install fan trays of the same model on the same switch.

When LSWM1FANSC/LSWM1HFANSC fan trays are used, cool air flows in through the air vents in the fan tray panel and the power supply panels, circulates through the chassis and the power supplies, and exhausts at the network port side, as shown in Figure 50.

When LSWM1FANSCB/LSWM1HFANSCB fan trays are used, cool air flows in through the air vents in the network port-side panel and the power supply panels, circulates through the chassis and the power supplies, and exhausts through the air vents in the fan tray panels, as shown in Figure 51.

Figure 50 Airflow through the HP 5900AF-48XG-4QSFP+ chassis (with LSWM1FANSC fan trays)

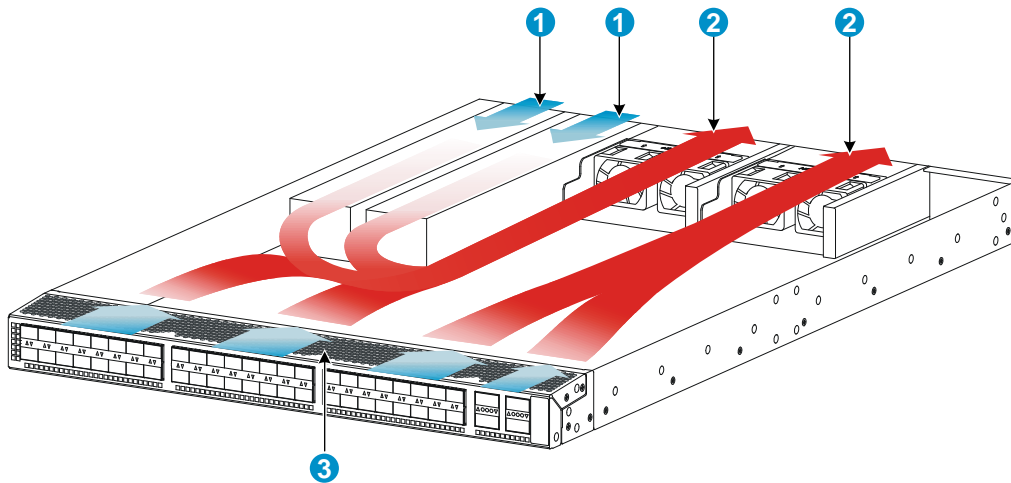


(1) Power supply air vents

(2) Fan tray air vents

(3) Network port-side air vents

Figure 51 Airflow through the HP 5900AF-48XG-4QSFP+ chassis (with LSWM1FANSCB fan trays)



(1) Power supply air vents

(2) Fan tray air vents

(3) Network port-side air vents

! IMPORTANT:

The chassis and the power supplies use separate air aisles. Make sure both aisles are not blocked.

Support and other resources

Contacting HP

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

<http://www.hp.com/support>

Before contacting HP, collect the following information:

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

Subscription service

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

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

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

Related information

Documents

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

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

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

Websites

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

Conventions

This section describes the conventions used in this documentation set.





Command conventions

Convention	Description
Boldface	Bold text represents commands and keywords that you enter literally as shown.
<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 bold text. For example, the New User window appears; click OK .
>	Multi-level menus are separated by angle brackets. For example, File > Create > Folder .

Symbols

Convention	Description
 WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
 CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
 IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
 TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the switching engine on a unified wired-WLAN switch.
	Represents an access point.
	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 card, such as a firewall, load-balancing, NetStream, SSL VPN, IPS, or ACG card.

Port numbering in examples

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

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