



Switch HPE OfficeConnect 1950

O Switch Aruba 1950 Gerenciável é perfeito para quem possui um café, uma empresa de design ou uma startup de tecnologia, uma rede confiável e segura desempenha um papel crítico no sucesso de seus negócios.



Hewlett Packard
Enterprise

HPE OfficeConnect 1950 12XGT 4SFP+ Switch Getting Started Guide

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Preparing for installation

Table 1 HPE OfficeConnect 1950 12XGT 4SFP+ Switch

| Product code | HPE description | Alias | RMN |
|--------------|---|-----------------------------|--------------|
| JH295A | HPE OfficeConnect 1950 12XGT 4SFP+ Switch | HPE 1950 12XGT 4SFP+ Switch | BJNGA-AD0067 |

ⓘ IMPORTANT:

For regulatory identification purposes, the switch is assigned a regulatory model number (RMN). The RMN should not be confused with the marketing name HPE OfficeConnect 1950 12XGT 4SFP+ Switch, or product code.

Safety recommendations

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

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

Examining the installation site

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

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

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

Temperature/humidity

Maintain temperature and humidity in the equipment room as described in "[Appendix A Chassis views and technical specifications](#)."

- Lasting high relative humidity can cause poor insulation, electricity leakage, mechanical property change of materials, and metal corrosion.
- Lasting low relative humidity can cause washer contraction and ESD and 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 "[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 | $\leq 3 \times 10^4$ (no visible dust on the tabletop over three days) |
| NOTE: Dust diameter $\geq 5 \mu\text{m}$ | |

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

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



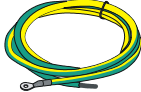
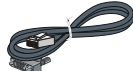

Installation tools

The following installation tools are user supplied:

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

Installation accessories

Table 4 Installation accessories

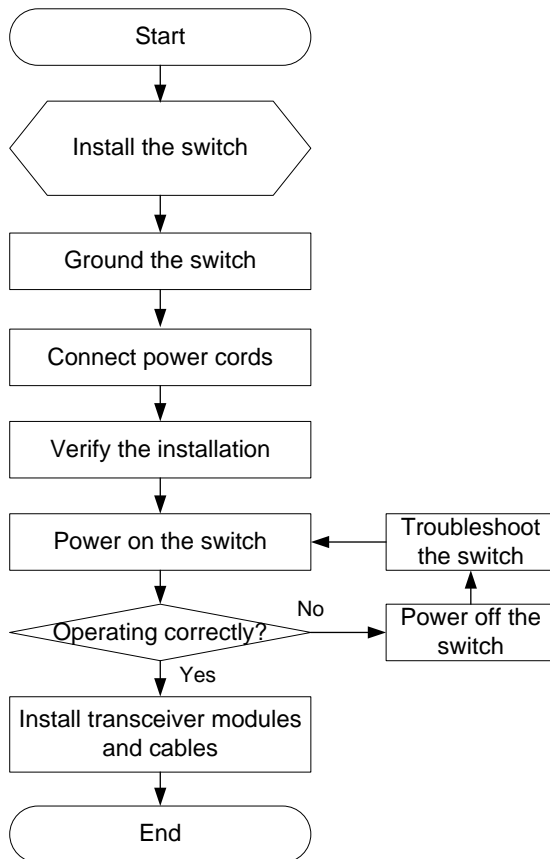
| Product code | Description | Quantity |
|--------------|--|----------|
| 5066-0850 | 1 U four-hole mounting bracket kit (including one pair of mounting brackets and eight M4 countersunk screws) (provided)  | 1 kit |
| N/A | M6 screw and floating nut (user supplied)  | N/A |
| 5185-9292 | Grounding cable (provided)  | 1 |
| 5184-6719 | Console cable (provided)  | 1 |
| 5184-7298 | Rubber feet (provided)  | 1 |

Installing the switch

CAUTION:

Keep the tamper-proof seal on a mounting screw on the chassis cover intact, and if you want to open the chassis, contact Hewlett Packard Enterprise for permission. Otherwise, Hewlett Packard Enterprise shall not be liable for any consequence.

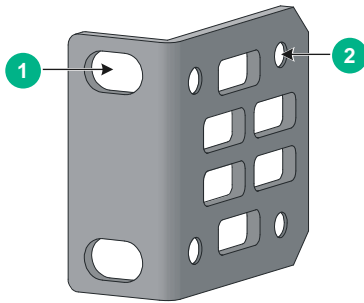
Figure 1 Hardware installation flow



Installing the switch in a 19-inch rack

Use the front mounting brackets to install the switch in a rack.

Figure 2 Front mounting bracket



(1) Hole for attaching the bracket to a rack (2) Hole for attaching the bracket to the switch chassis

NOTE:

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

This task requires two people.

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

1. Identify the mounting positions.
2. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
3. Attach the front mounting brackets to the chassis:
 - a. Unpack the front mounting brackets and the M4 screws (provided with the switch) for attaching the brackets to the switch chassis.
 - b. Align the round holes in the wide flange of one front mounting bracket with the screw holes in the chassis.
You can install the front mounting bracket on the port side or power module side of the switch.
 - c. Use M4 screws to attach the mounting bracket to the chassis.
 - d. Repeat the preceding two steps to attach the other mounting bracket to the chassis.

Figure 3 Attaching the front mounting bracket to the port side

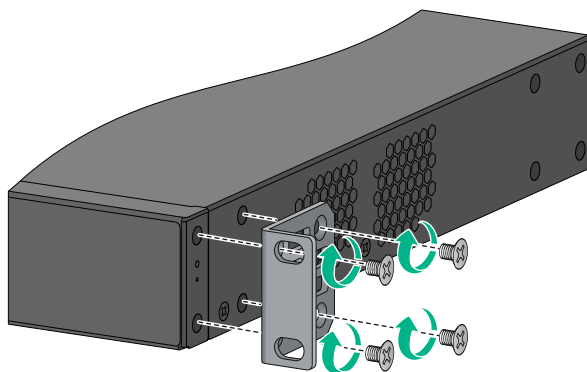
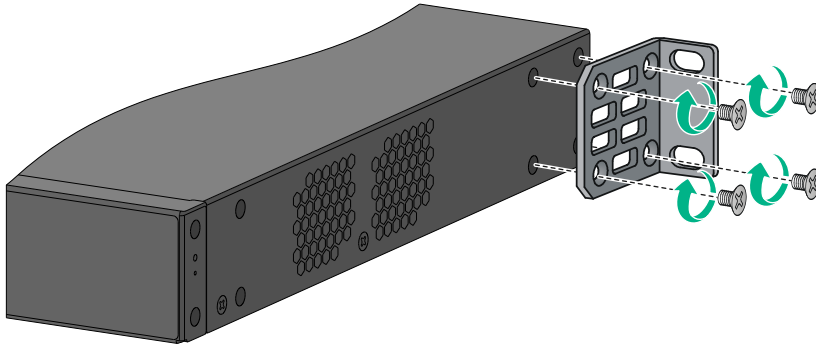


Figure 4 Attaching the front mounting bracket to the power module side



4. Mount the chassis in the rack:

- a.** One person supports the chassis bottom with one hand, holds the front part of the chassis with the other hand, and pushes the chassis into the rack gently
- b.** The other person uses M6 screws and cage nuts (user supplied) to attach the switch to the rack.

Figure 5 Mounting the switch in the rack (front mounting brackets at the port side)



Figure 6 Mounting the switch in the rack (front mounting brackets at the power module side)



Mounting the switch on a workbench

IMPORTANT:

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

To mount the switch on a workbench:

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

Grounding the switch

WARNING!

Correctly connecting the 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 so the faradism and leakage electricity can be safely released to the earth to minimize EMI susceptibility of the switch.

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

- [Grounding the switch with a grounding strip](#)
- [Grounding the switch with a grounding conductor buried in the earth ground](#)
- [Grounding the switch by using the AC power cord](#)

NOTE:

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

Grounding the switch with a grounding strip

WARNING!

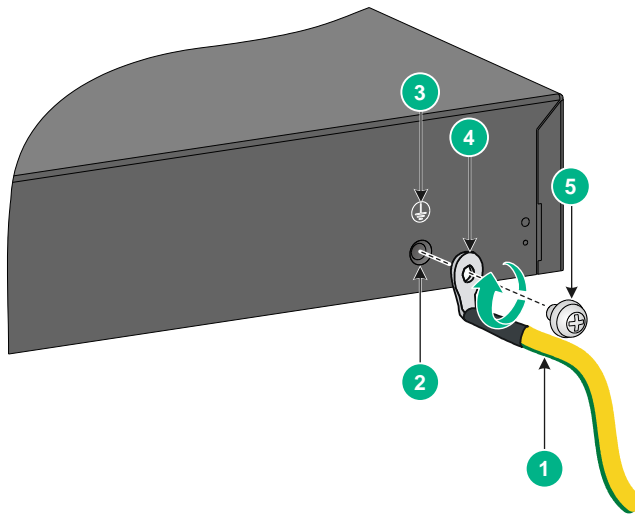
Connect the grounding cable to the grounding system in the equipment room. Do not connect it to a fire main or lightning rod.

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

Connecting the grounding cable to the chassis

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

Figure 7 Connecting the grounding cable to the chassis



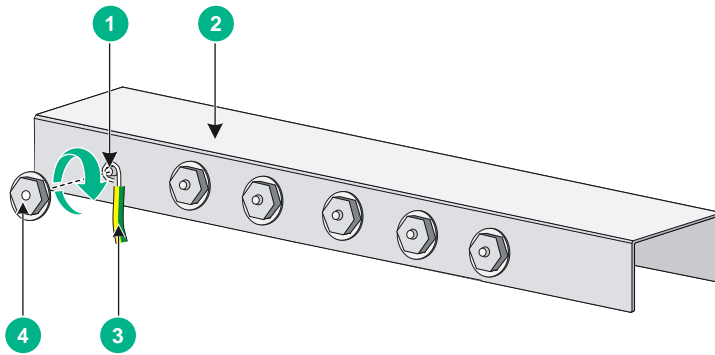
| | |
|---------------------|--------------------|
| (1) Grounding cable | (2) Grounding hole |
| (3) Grounding sign | (4) Ring terminal |
| (5) Grounding screw | |

3. Verify that the grounding cable has been securely connected to the rear grounding point.

Connecting the grounding cable to a grounding strip

1. Cut the grounding cable to a length required for connecting to the grounding strip.
2. Use a wire stripper to strip 20 mm (0.79 in) of insulation off the end of the grounding cable. Then use needle-nose pliers to bend the bare metal part to the shape as shown in [Figure 8](#). Make sure the bended part can securely attached to the grounding post on the grounding strip.
3. Attach the bended part of the grounding cable to the grounding post and use the hex nut to fasten the bended part to the post.

Figure 8 Connecting the grounding cable to the grounding strip



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

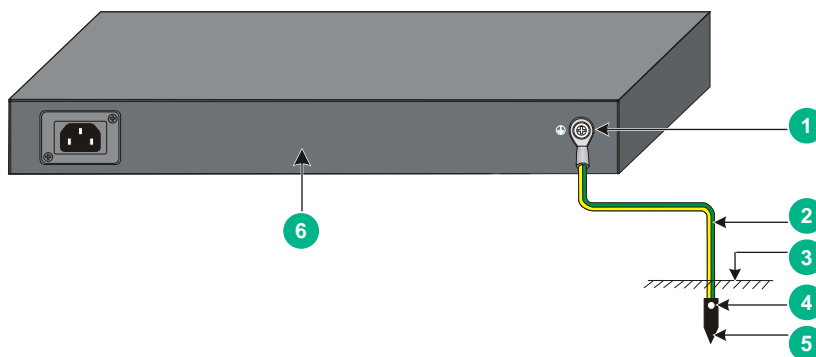
Grounding the switch with a grounding conductor buried in the earth ground

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

The dimensions of the angle iron must be a minimum of 50 × 50 × 5 mm (1.97 × 1.97 × 0.20 in). The steel tube must be zinc-coated and its wall thickness must be a minimum of 3.5 mm (0.14 in).

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

Figure 9 Grounding the switch by burying the grounding conductor into the earth ground



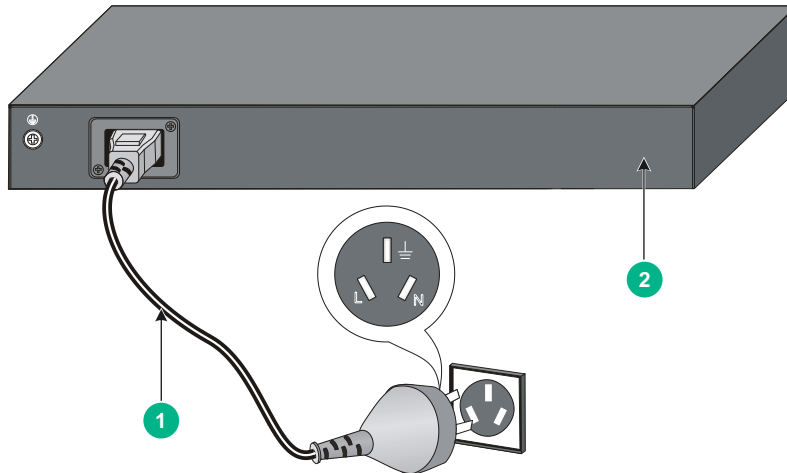
| | | |
|---------------------|-------------------------|------------------------|
| (1) Grounding screw | (2) Grounding cable | (3) Earth |
| (4) Joint | (5) Grounding conductor | (6) Chassis rear panel |

Grounding the switch by using the AC power cord

If the installation site has no grounding strips or earth ground, you ground an AC-powered switch through the PE wire of the power cord. Make sure of the following information:

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

Figure 10 Grounding the switch by using the AC power cord



(1) Power cord that has a PE terminal

(2) Chassis rear panel

NOTE:

- If the ground contact in the power outlet is not connected to the ground, report the problem and reconstruct the grounding system.
- As a best practice to guarantee the grounding effect, ground the switch by connecting the grounding cable provided with the switch to the grounding strip in the equipment room.

Connecting the power cord

CAUTION:

Provide a circuit breaker for each power module and make sure the circuit breaker is off before installation.

Table 5 Power cord connection procedures at a glance

| Power mode | Connection procedure reference |
|------------------------------|---|
| AC input | Connecting an AC power cord to the switch |
| +12 VDC RPS input (RPS800-A) | Connecting a DC power cord to the switch |

Connecting an AC power cord to the switch

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Connect one end of the AC power cord to the AC-input power receptacle on the switch.
3. Insert the cable tie through the cable bridge.
4. Use the cable tie to secure the AC power cord to the cable bridge.
5. Connect the other end of the power cord to the AC power outlet.

Figure 11 Connecting an AC power cord to the switch (1)

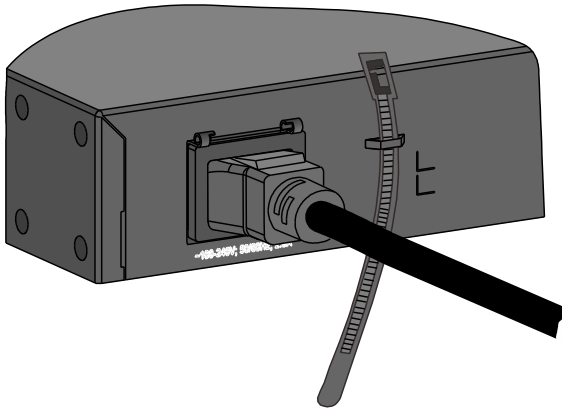
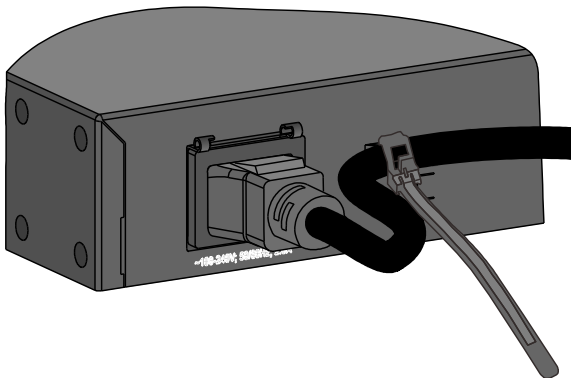


Figure 12 Connecting an AC power cord to the switch (2)



Connecting a DC power cord to the switch

WARNING!

RPS power cords are required if the RPS power source is used.

To connect a DC power cord to the switch:

1. Wear an ESD wrist strap and make sure it makes good skin contact and is reliably grounded.
2. Remove the filler panel from the DC receptacle as shown in [Figure 13](#). Install the filler panel if no power cord is to be connected to the receptacle.
3. Correctly orient the plug at one end of the cable with the power receptacle on the power module, and insert the plug into the power receptacle. See callout 1 in [Figure 14](#).
If you cannot insert the plug into the receptacle, re-orient the plug rather than use excessive force to push it in.
4. Tighten the screws on the plug with a flat-blade screwdriver to secure the plug in the power receptacle. See callout 2 in [Figure 14](#).
5. Connect the other end of the power cord to an external RPS power source.

Figure 13 Connecting a DC power cord to the switch (1)

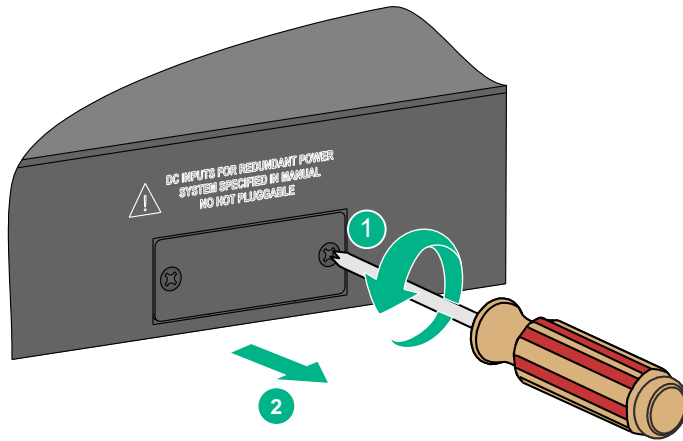
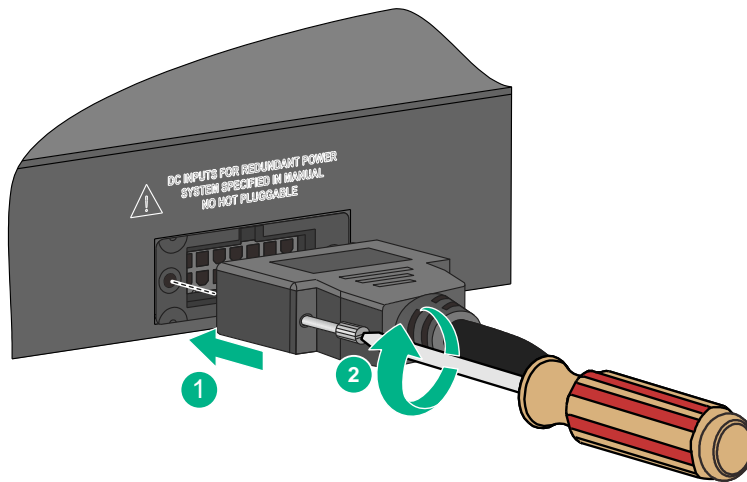


Figure 14 Connecting a DC power cord to the switch (2)



Verifying the installation

After you complete the installation, verify the following information:

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

Accessing the switch for the first time

You can use one of the following default methods to access the switch:

- [Logging in to the quick set-up CLI](#)—For quick set-up of key device configuration.
- [Logging in to the Web interface](#)—For detailed device configuration.

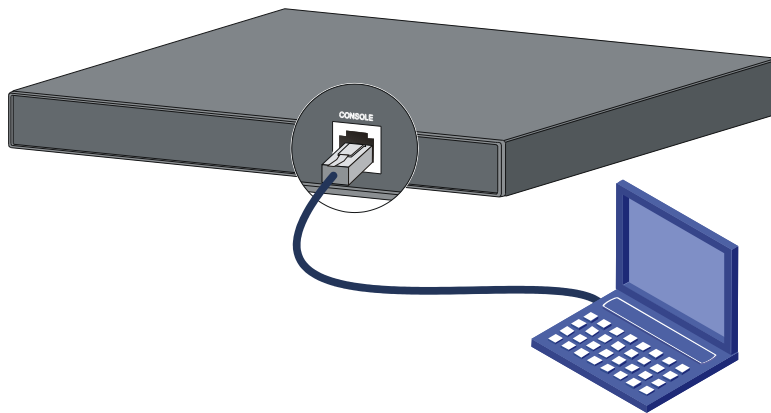
Logging in to the quick set-up CLI

Setting up the configuration environment

You can access the switch through the serial console port or the mini USB console port. As a best practice, use the serial port to access the switch. To access the switch through the mini USB console port, you need to prepare the mini USB console cable.

Only the mini USB console port takes effect if you connect both the serial console port and mini USB console port.

Figure 15 Connecting the console port to a PC



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 console terminal.

Figure 16 Console cable

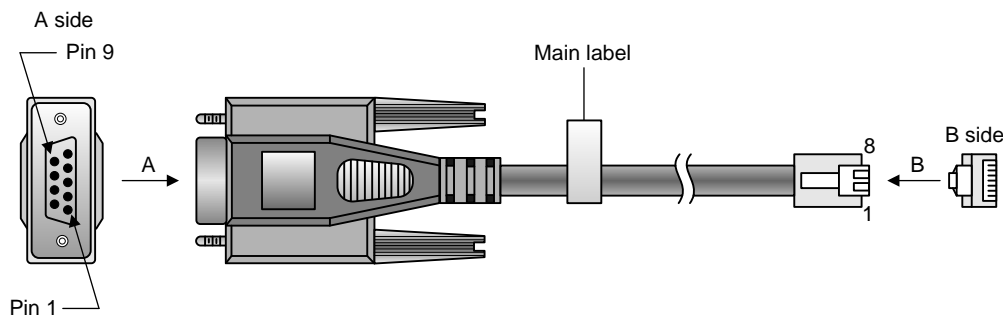


Table 6 Console port signaling and pinout

| RJ-45 | Signal | DB-9 | Signal |
|--------------|---------------|-------------|---------------|
| 1 | RTS | 8 | CTS |
| 2 | DTR | 6 | DSR |
| 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 configuration terminal (for example, a PC) to the switch:

1. Connect 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.
-

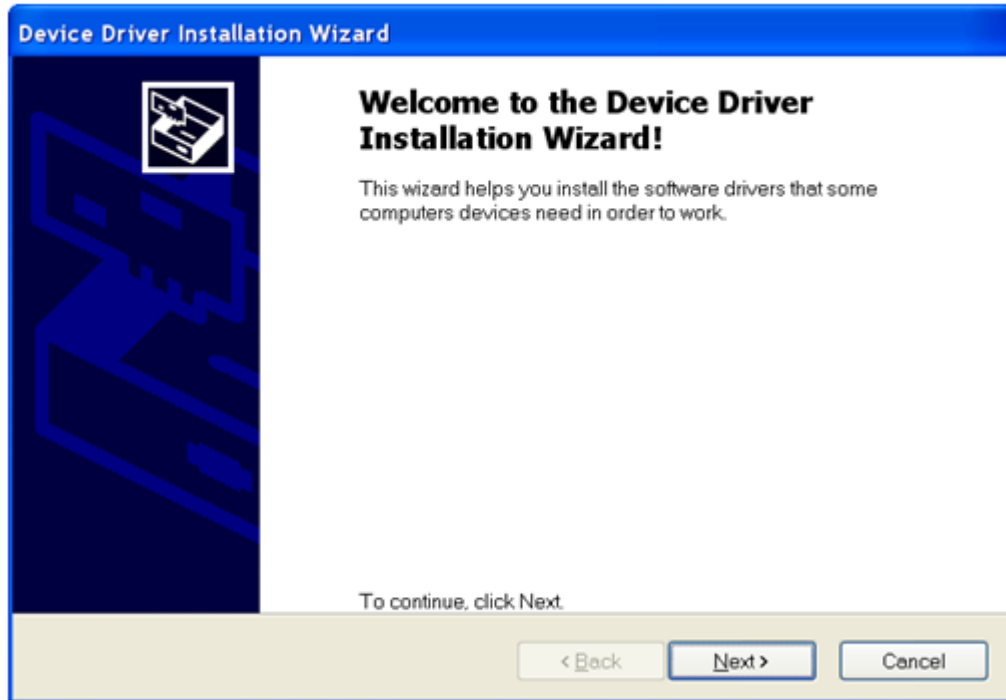
Connecting the mini USB console cable

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

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

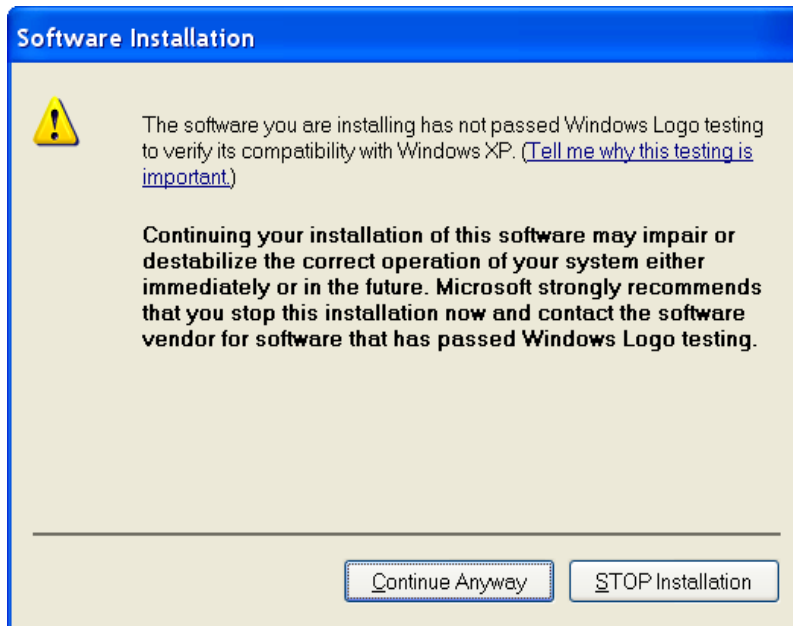
1. Connect the standard USB Type A connector to the USB port of the PC.
2. Connect the mini USB Type B connector to the mini USB console port of the switch.
3. Click the following link, or copy it to the address bar on the browser to log in to download page of the USB console driver, and download the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

Figure 17 Device Driver Installation Wizard



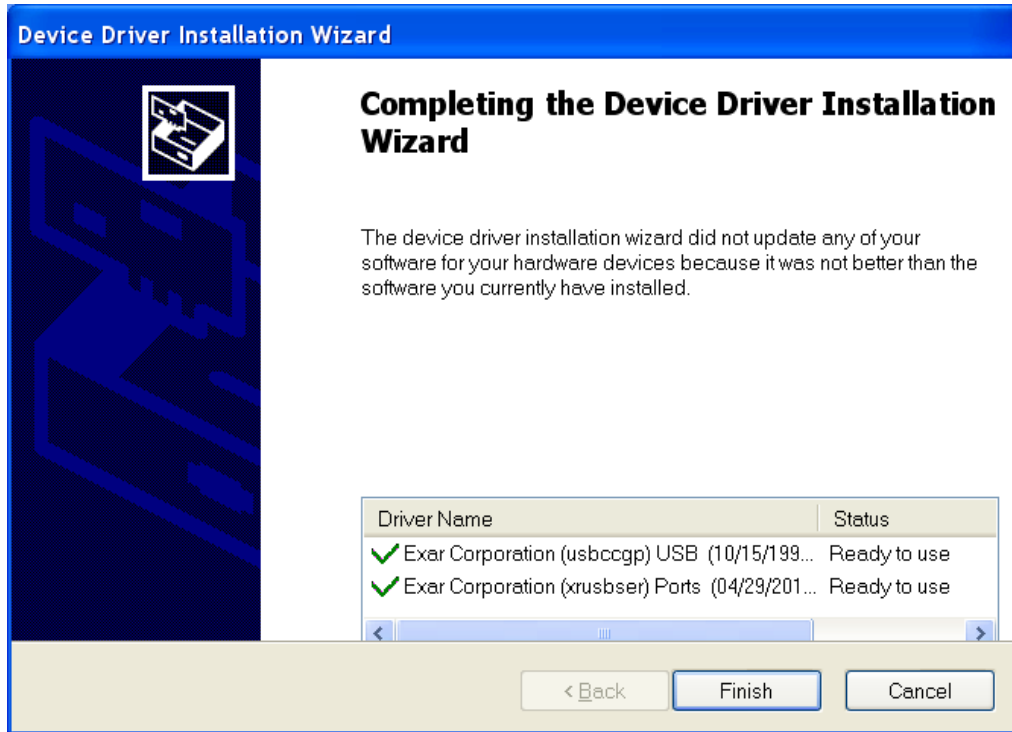
6. Click **Continue Anyway** if the following dialog box appears.

Figure 18 Software Installation



7. Click **Finish**.

Figure 19 Completing the device driver installation wizard



Setting terminal parameters

To configure and manage the switch through the console port, you must run a terminal emulator program, TeraTermPro or PuTTY, on your PC. 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**—38400.
- **Data bits**—8.
- **Parity**—None.
- **Stop bits**—1.
- **Flow control**—None.

Powering on the switch

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

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

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

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

For more information about the configuration commands and CLI, see *HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User Guide*.

Logging in to the Web interface

Log in to the Web interface through HTTP or HTTPS.

Setting up the configuration environment

Before you log in to the Web interface, use a twisted pair cable to connect the switch to the network, or to the NIC of a PC.

Restrictions and guidelines

To ensure a successful login, verify that your operating system and Web browser meet the requirements, and follow the guidelines in this section.

Web browser requirements

The following Web browsers are supported:

- Internet Explorer 8 or higher.
- Google Chrome 10 or higher.
- Mozilla Firefox 4 or higher.
- Opera 11.11 or higher.
- Safari 5.1 or higher.

To access the Web interface, you must use the following browser settings:

- Accept the first-party cookies (cookies from the site you are accessing).
- To ensure correct display of webpage contents after software upgrade or downgrade, clear data cached by the browser before you log in.
- Enable active scripting or JavaScript, depending on your Web browser.
- If you are using a Microsoft Internet Explorer browser, you must enable the following security settings:
 - Run ActiveX controls and plug-ins.
 - Script ActiveX controls marked safe for scripting.

Default login settings

Use the settings in [Table 7](#) for the first login.

Table 7 Default login settings

| Item | Setting |
|------------------------------|---|
| Device IP (VLAN-interface 1) | See " Logging in to the Web interface for the first time. " |
| IP address mask | |
| Username | admin |
| Password | None |
| User role | network-admin |

NOTE:

If the network has a DHCP server, you must use the DHCP assigned IP address to access the device. For more information, see "[Logging in to the Web interface for the first time.](#)"

Concurrent login users

The Web interface allows a maximum of 32 concurrent users. If this limit is reached, login attempts will fail.

Logging in to the Web interface for the first time

! **IMPORTANT:**

For security purposes, change the login information and assign access permissions immediately after the first successful login.

By default, HTTP and HTTPS are enabled.

To log in to the Web interface:

1. Use an Ethernet cable to connect the configuration terminal to an Ethernet port on the device.
2. Identify the IP address and mask of the device.
 - o If the device is not connected to the network, or no DHCP server exists on the network, the device uses the default IP address and mask. The default mask is 255.255.0.0. The default IP address is 169.254.xxx.xxx, where xxx.xxx depends on the rightmost two bytes of the MAC address. Find the MAC address label on the device and use the following rules to determine the rightmost two bytes for the IP address:

| Rightmost two bytes of the MAC address | Rightmost two bytes for the IP address |
|--|--|
| All 0s | 0.1 |
| All Fs | 255.1 |
| Not all 0s or all Fs | Decimal values of the rightmost two bytes of the MAC address |

For example:

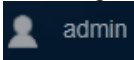
| MAC address | IP address |
|--------------|---|
| 08004E080000 | 169.254.0.1 |
| 08004E08FFFF | 169.254.255.1 |
| 08004E082A3F | 169.254.42.63 (The decimal value of 2A is 42. The value of 3F is 63.) |

- o If a DHCP server is available, the device obtains an IP address from the server. To identify the address, log in to the device through the console port, and then execute the **summary** command. The following is the sample output:

```
<Sysname> summary
Select menu option:          Summary
IP Method:                   DHCP
IP address:                   10.153.96.86
Subnet mask:                  255.255.255.0
Default gateway:              0.0.0.0
```

For more information about console login, see the getting started guide for the device.

3. Assign the login host an IP address in the same subnet as the device.
4. Open the browser and enter login information.
 - a. In the address bar, enter the IP address of the device.
 - **HTTP access**—Enter the address in the **http://ip-address:port** or **ip-address:port** format.
 - **HTTPS access**—Enter the address in the **https://ip-address:port** format.

The *ip-address* argument represents the IP address of the device. The *port* argument represents the HTTP or HTTPS service port. The default port number is 80 for HTTP and 443 for HTTPS. You do not need to enter the port number if you have not changed the service port setting.
 - b. On the login page, enter the default username (**admin**) and the verification code.
You do not need to enter a password at the first login.
 - c. Click **Login**.
5. Change the login information.
 - o To change the password of the login user (**admin** at the first login), click the **Admin** icon .
 - o To add new user accounts and assign access permissions to different users, select **Device > Maintenance > Administrators**.

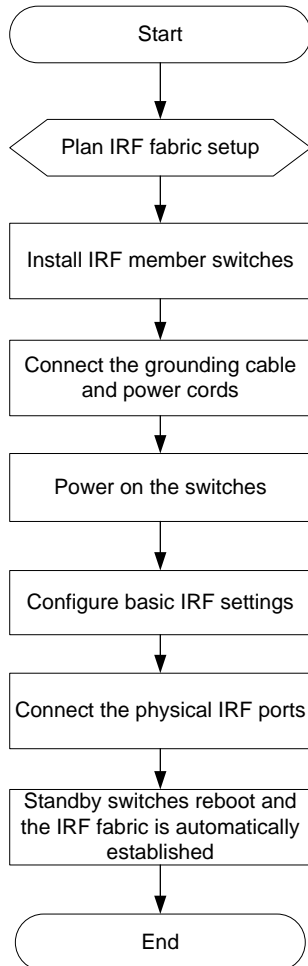
For more information about how to configure the device by using the Web interface, see *HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User Guide*.

Setting up an IRF fabric

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

IRF fabric setup flowchart

Figure 20 IRF fabric setup flowchart



To set up an IRF fabric:

| Step | Description |
|--------------------------|---|
| 1. Plan IRF fabric setup | <p>Plan the installation site and IRF fabric setup parameters:</p> <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 |

| Step | Description |
|---|--|
| 2. Install IRF member switches | See "Installing the switch in a 19-inch rack" or "Mounting the switch on a workbench." |
| 3. Connect ground wires and power cords | See "Grounding the switch" and "Connecting the power cord." |
| 4. Power on the switches | N/A |
| 5. Configure basic IRF settings | See <i>HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User Guide</i> . |
| 6. Connect the physical IRF ports | Connect physical IRF ports on switches. Use SFP+ transceiver modules and fibers over a long distance, or use SFP+ network cables or twisted pair cables over a short distance. All switches except the master switch automatically reboot, and the IRF fabric is established. |

Planning IRF fabric setup

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

Planning IRF fabric size and the installation site

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

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

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

NOTE:

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

Identifying the master switch and planning IRF member IDs

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

An IRF fabric has only one master switch. You configure and manage all member switches in the IRF fabric at the CLI of the master switch. IRF member switches automatically elect a master.

You can affect the election result by assigning a high member priority to the intended master switch. For more information about master election, see *HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User 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 reliable ring topology. In ring topology, the failure of one IRF link does not cause the IRF fabric to split as in daisy chain topology. Instead, the IRF fabric changes to a daisy chain topology without interrupting network services.

You connect the IRF member switches through IRF ports, the logical interfaces for the connections between IRF member switches. Each IRF member switch has two IRF ports: IRF-port 1 and IRF-port 2. To use an IRF port, you must bind a minimum of one physical port to it.

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

The switch can provide 10-GE IRF connections through 1/10GBASE-T Ethernet ports/SFP+ ports, and you can bind several 1/10GBASE-T Ethernet ports/SFP+ ports to an IRF port for increased bandwidth and availability.

Figure 21 and Figure 22 show the topologies of an IRF fabric made up of three switches. The IRF port connections in the two figures are for illustration only, and more connection methods are available.

Figure 21 IRF fabric in daisy chain topology

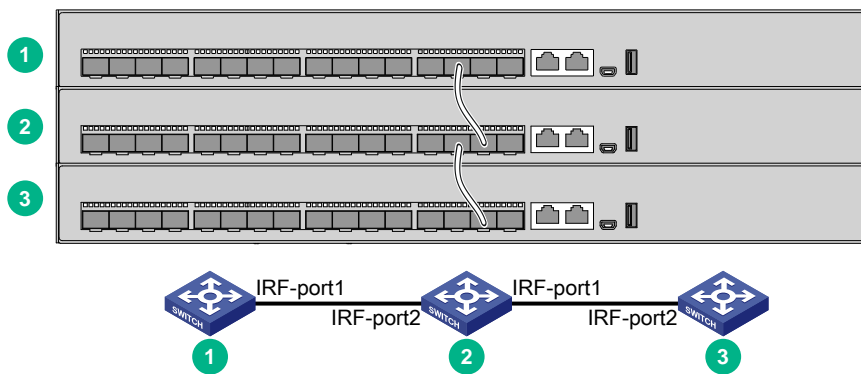
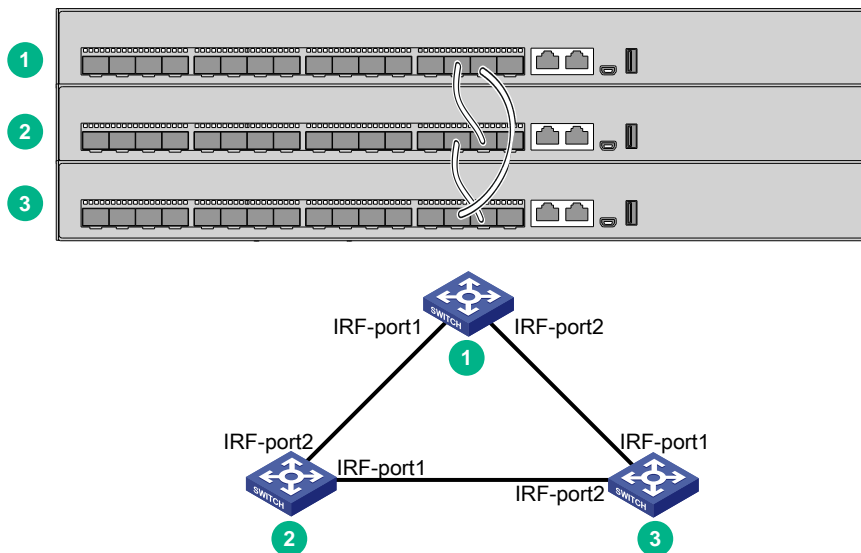


Figure 22 IRF fabric in ring topology



Identifying physical IRF ports on the member switches

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

Table 8 shows the physical ports that can be used for IRF connection and the port use restrictions.

Table 8 Physical IRF port requirements

| Candidate physical IRF ports | Requirements |
|---|--|
| 4 fixed SFP+ ports and 12 fixed 1/10GBASE-T autosensing Ethernet ports on the front panel | All physical ports to be bound to an IRF port must be the same type. |

Planning the cabling scheme

Use twisted pair cables, SFP+ network cables, or SFP+ transceiver modules and fibers to connect the IRF member switches. If the IRF member switches are far away from one another, choose SFP+ transceiver modules with optical fibers. If the IRF member switches are all in one equipment room, choose twisted pair cables or SFP+ network cables. For more information about SFP+ network cables and SFP+ transceiver modules, see "[Appendix B Ports and LEDs.](#)"

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

Connecting the IRF member switches in one rack

Use SFP+ network cables to connect the IRF member switches (9 switches in this example) in a rack as shown in Figure 23. The switches in the ring topology (see Figure 24) are in the same order as connected in the rack.

Figure 23 Connecting the switches in one rack

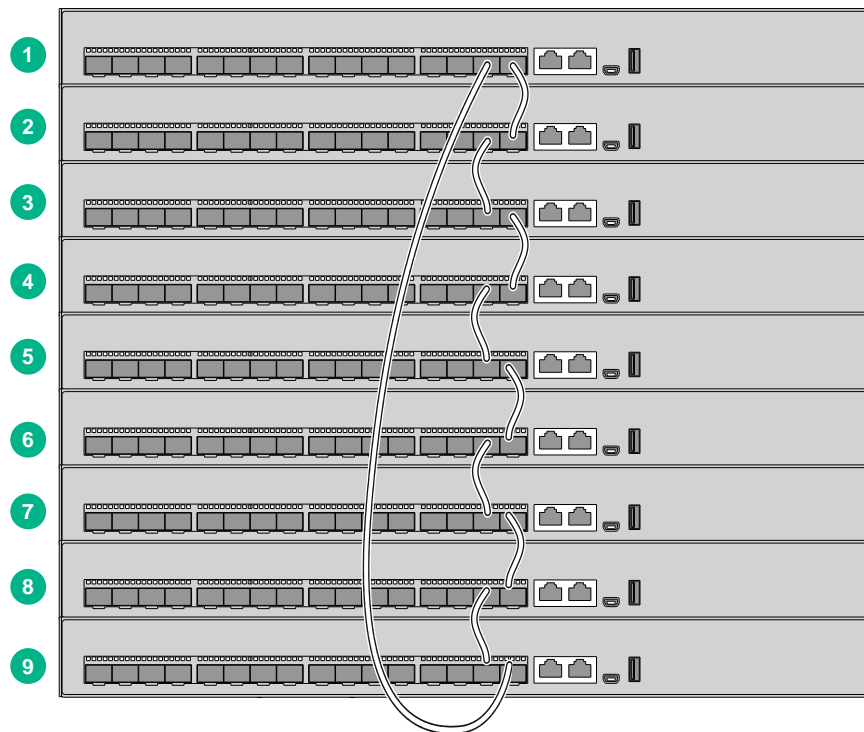
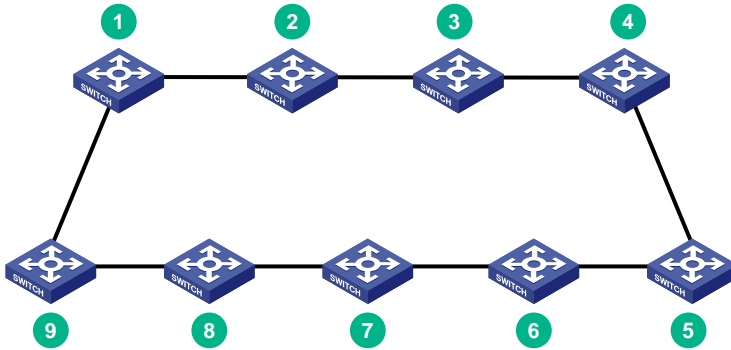


Figure 24 IRF fabric topology

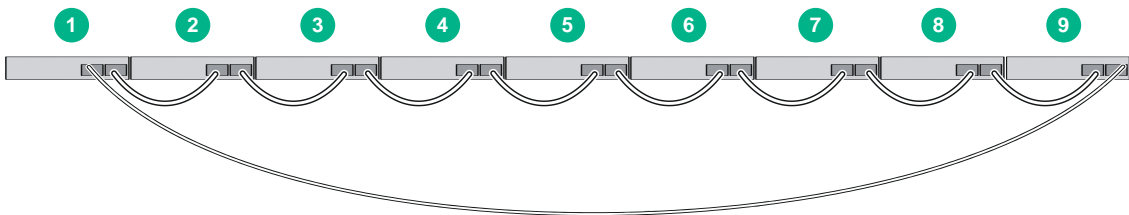


Connecting the IRF member switches in a ToR solution

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

Figure 25 shows an example for connecting 9 top of rack IRF member switches by using SFP+ transceiver modules and optical fibers. The topology is the same as Figure 24.

Figure 25 ToR cabling



Configuring basic IRF settings

After you install the IRF member switches, power on the switches, and log in to each IRF member switch (see *HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User Guide*) to configure their member IDs, member priorities, and IRF port bindings.

Follow these guidelines when you configure the switches:

- Assign the master switch higher member priority than any other switch.
- 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.

For more information about configuring basic IRF settings, see *HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) User Guide*.

Connecting the physical IRF ports

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

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

Maintenance and troubleshooting

Power module failure

Fixed power module failure

The switch uses fixed power modules, and supports three power input modes: AC input, RPS DC input, and concurrent AC and RPS DC inputs.

Look at the system status LED and the RPS status LED of the switch to identify power system failure.

Table 9 Description for the power failure indication LEDs

| LED | Mark | Status | Description |
|-------------------|------|---------------|--|
| System status LED | SYS | Off | The switch is powered off. |
| RPS status LED | RPS | Steady green | The AC input is normal, and the RPS is in position or operating correctly. |
| | | Steady yellow | RPS power input is normal, but AC input has failed or AC input is not connected. |
| | | Off | No RPS is connected. |

AC input

- Symptom
The system status LED is off.
- Solution
To resolve the problem:
 - a. Verify that the AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
 - b. Verify that the external AC power system is operating correctly.
 - c. Verify that the operating temperature of the switch is in an acceptable range, and the power module has good ventilation. Over-temperature can cause the power module to stop working and enter protection state.
 - d. If the problem persists, contact Hewlett Packard Enterprise Support.

RPS DC input

- Symptom
The system status LED or RPS status LED is off.
- Solution
To resolve the problem:
 - a. Verify that the switch is securely connected to the RPS.
 - b. Verify that the RPS is operating correctly.
 - c. Verify that the operating temperature of the switch is in an acceptable range, and the power module has good ventilation. Over-temperature can cause the power module to stop working and enter protection state.
 - d. If the problem persists, contact Hewlett Packard Enterprise Support.

Concurrent RPS and AC inputs

- Symptom 1
The system status LED is off.
- Solution
To resolve the problem:
 - a. Verify that the AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
 - b. Verify that the external AC power system is operating correctly.
 - c. Verify that the switch is securely connected to the RPS.
 - d. Verify that the RPS is operating correctly.
 - e. Verify that the operating temperature of the switch is in an acceptable range, and the power module has good ventilation. Over-temperature can cause the power module to stop working and enter protection state.
 - f. If the problem persists, contact Hewlett Packard Enterprise Support.
- Symptom 2
The system status LED is on but the RPS status LED is steady yellow.
- Solution
To resolve the problem:
 - a. Verify that the AC power cord is securely connected to the switch, and the AC-input power receptacle on the switch and the connected AC power outlet are in good condition.
 - b. Verify that the external AC power system is operating correctly.
 - c. If the problem persists, contact Hewlett Packard Enterprise Support.
- Symptom 3
The system status LED is on but the RPS status LED is off.
- Solution
To resolve the problem:
 - a. Verify that the switch is securely connected to the RPS.
 - b. Verify that the RPS is operating correctly.
 - c. If the problem persists, contact Hewlett Packard Enterprise Support.

Fan failure

The switch uses fixed fans. If a fan failure occurs, contact Hewlett Packard Enterprise Support and do not attempt to fix the problem yourself.

Configuration terminal display problems

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

No display

Symptom

The PC displays nothing when the switch is powered on.

Solution

To resolve the problem:

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

Garbled display

Symptom

The display on the PC is garbled.

Solution

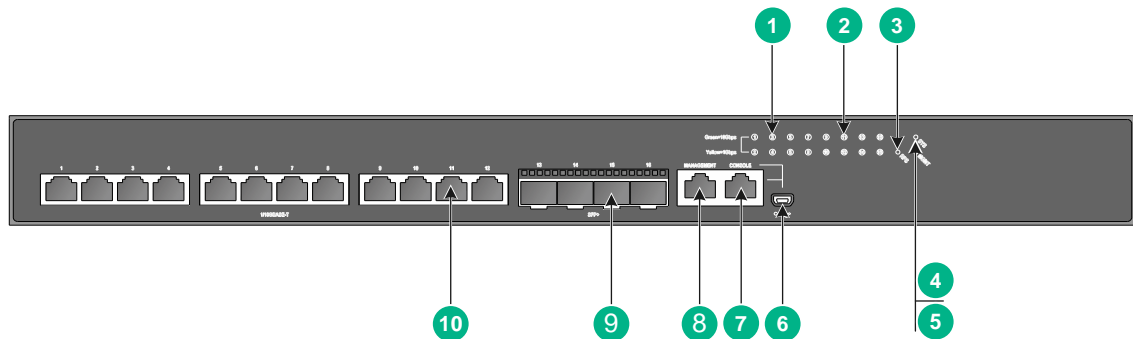
To resolve the problem:

1. Verify that the following settings are configured for the terminal:
 - **Baud rate**—38400.
 - **Data bits**—8.
 - **Parity**—None.
 - **Stop bits**—1.
 - **Flow control**—None.
2. If the problem persists, contact Hewlett Packard Enterprise Support.

Appendix A Chassis views and technical specifications

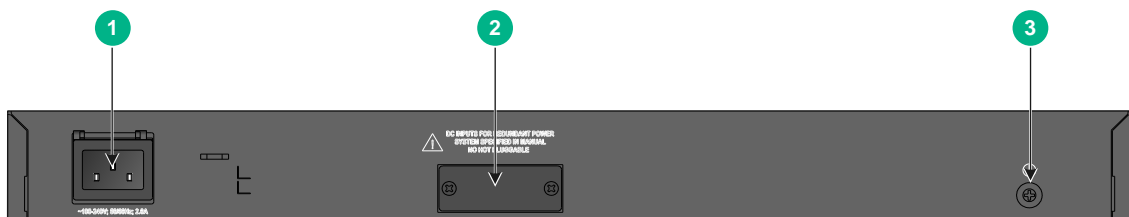
Chassis views

Figure 26 HPE 1950 12XGT 4SFP+ Switch front panel



| | |
|--|--|
| (1) 1/10GBASE-T autosensing Ethernet port LED | (2) SFP+ port LED |
| (3) RPS status LED (RPS) | (4) System status LED (SYS) |
| (5) Management Ethernet port status LED (MGMT) | (6) Mini USB console port |
| (7) Serial console port | (8) Management Ethernet port |
| (9) SFP+ port | (10) 1/10GBASE-T autosensing Ethernet port |

Figure 27 HPE 1950 12XGT 4SFP+ Switch rear panel



| | |
|-------------------------------|-------------------------------|
| (1) AC-input power receptacle | (2) DC-input power receptacle |
| (3) Grounding screw | |

Technical specifications

Table 10 Technical specifications

| Item | Specification |
|------------------------|--|
| Dimensions (H x W x D) | 43.6 x 440 x 260 mm (1.72 x 17.32 x 10.24 in) |
| Weight | ≤ 3.8 kg (8.38 lb) |
| Console ports | <ul style="list-style-type: none"> 1 x mini USB console port 1 x serial console port |

| Item | Specification |
|--|--|
| | Only the mini USB console port is available when you connect both ports. |
| Management Ethernet ports | 1 |
| SFP+ ports | 4 |
| 1/10GBASE-T autosensing Ethernet ports | 12 |
| Input voltage | <ul style="list-style-type: none"> • AC-input <ul style="list-style-type: none"> ○ Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz ○ Max voltage range: 90 VAC to 264 VAC @ 47 Hz to 63 Hz • +12 VDC-input <ul style="list-style-type: none"> ○ Rated voltage range: 11 VDC to 12 VDC ○ Max voltage range: 10.8 VDC to 13.2 VDC <p>NOTE: Use an HPE RPS800-A RPS as the DC power source.</p> |
| Power consumption (static) | <ul style="list-style-type: none"> • AC: 26 W • DC: 22 W |
| Power consumption (full configuration) | <ul style="list-style-type: none"> • AC: 74 W • DC: 68 W |
| Chassis leakage current compliance | UL60950-1, EN60950-1, IEC60950-1, GB4943 |
| Melting current of power module fuse | <ul style="list-style-type: none"> • AC-input: 5 A, 250 V • DC-input: 8 A, 250 V |
| Operating temperature | 0°C to 45°C (32°F to 113°F) |
| Relative humidity | 5% to 95%, noncondensing |
| Fire resistance compliance | UL60950-1, EN60950-1, IEC60950-1, GB4943 |

Appendix B Ports and LEDs

Ports

Console port

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

Table 11 Console port specifications

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

Management Ethernet port

Each switch provides a management Ethernet port on the front panel. You can connect the management Ethernet 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 |
| Port transmission rate | 10/100 Mbps, half/full duplex 1000 Mbps, full duplex MDI/MDI-X auto-sensing |
| Transmission medium and max transmission distance | 100 m (328.08 ft) over category-5 twisted pair cable |
| Standards | IEEE 802.3i, 802.3u, 802.3ab |
| Functions and services | Switch software and Boot ROM upgrade, network management |

1/10GBASE-T autosensing Ethernet port

Each switch provides 12 fixed 1/10GBASE-T autosensing Ethernet ports on the front panel.

Table 13 1/10GBASE-T autosensing Ethernet port specifications

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

SFP+ port

Each switch provides 4 fixed SFP+ ports on the front panel. To connect the peer SFP+ ports over a long distance, use SFP/SFP+ transceiver modules and fibers. To connect the peer SFP+ ports over a short distance, use SFP+ cables. You can install the 1000 Mbps SFP transceiver module in [Table 14](#), 10 Gbps SFP+ transceiver modules in [Table 15](#), or 10 Gbps SFP+ network cables in [Table 16](#) in the SFP+ ports.

Table 14 1000 Mbps SFP transceiver modules available for the SFP+ ports

| Product code | HPE description | Central wavelength (nm) | Connector | Cable/fiber diameter (µm) | Multimode fiber modal bandwidth (MHz × km) | Max transmission distance |
|--------------|--|-------------------------|-----------|---------------------------|--|---------------------------|
| JD089B | HPE X120 1G SFP RJ45 T Transceiver | N/A | RJ-45 | Category-5 twisted pair | N/A | 100 m (328.08 ft) |
| JD118B | HPE 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 | 200 m (656.17 ft) |
| JD119B | HPE X120 1G SFP LC LX Transceiver | 1310 | LC | Single-mode, 9/125 | N/A | 10 km (6.21 miles) |
| | | | | Multi-mode, 50/125 | 500 or 400 | 550 m (1804.46 ft) |
| | | | | Multi-mode, 62.5/125 | 500 | 550 m (1804.46 ft) |
| JD061A | HPE X125 1G SFP LC LH40 1310nm Transceiver | 1310 | LC | Single-mode, 9/125 | N/A | 40 km (24.86 miles) |
| JD062A | HPE X120 1G SFP LC LH40 1550nm Transceiver | 1550 | LC | Single-mode, 9/125 | N/A | 40 km (24.86 miles) |

| Product code | HPE description | Central wavelength (nm) | Connector | Cable/fiber diameter (µm) | Multimode fiber modal bandwidth (MHz × km) | Max transmission distance |
|--------------|--|-------------------------|-----------|---------------------------|--|---------------------------|
| JD063B | HPE X125 1G SFP LC LH70 Transceiver | 1550 | LC | Single-mode , 9/125 | N/A | 70 km (43.50 miles) |
| JD103A | HPE X120 1G SFP LC LH100 Transceiver | 1550 | LC | Single-mode , 9/125 | N/A | 100 km (62.14 miles) |
| JD098B | HPE X120 1G SFP LC BX 10-U Transceiver | TX: 1310 RX: 1490 | LC | Single-mode , 9/125 | N/A | 10 km (6.21 miles) |
| JD099B | HPE X120 1G SFP LC BX 10-D Transceiver | TX: 1490 RX: 1310 | | | | |

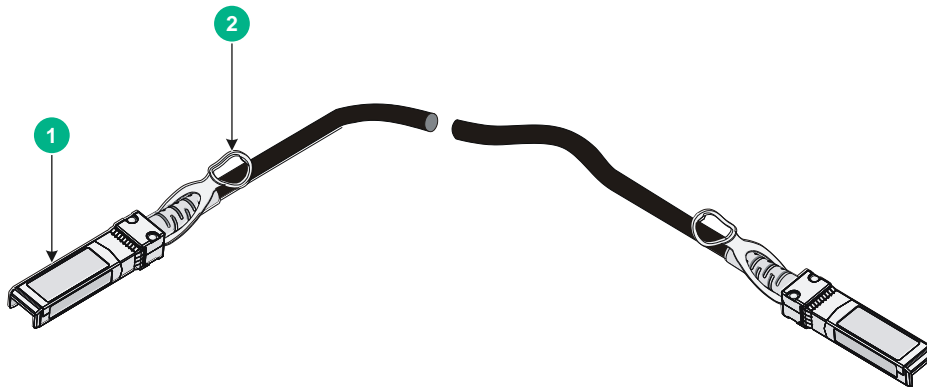
Table 15 10 Gbps SFP+ transceiver modules available for the SFP+ ports

| Product code | HPE description | Central wavelength (nm) | Connector | Fiber diameter (µm) | Multimode fiber modal bandwidth (MHz × km) | Max transmission distance |
|--------------|-------------------------------------|-------------------------|-----------|---------------------|--|---------------------------|
| JD092B | HPE 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 (85.30 ft) |
| JD094B | HP X130 10G SFP+ LC LR Transceiver | 1310 | LC | Single-mode , 9/125 | N/A | 10 km (6.21 miles) |

Table 16 SFP+ network cables available for the SFP+ ports

| Product code | HPE description | Cable length |
|--------------|---------------------------------------|------------------|
| JD095C | HPE X240 10G SFP+ SFP+ 0.65m DA Cable | 0.65 m (2.13 ft) |
| JD096C | HPE X240 10G SFP+ SFP+ 1.2m DA Cable | 1.2 m (3.94 ft) |
| JD097C | HPE 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 28 SFP+ network cable



(1) Connector

(2) Pull latch

NOTE:

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

LEDs

Table 17 HPE 1950 12XGT 4SFP+ Switch LEDs at a glance

| LED | Remarks |
|---|--------------------------------|
| System status LED | See Table 18 . |
| RPS status LED | See Table 19 . |
| Management Ethernet port LED | See Table 20 . |
| 1/10GBASE-T autosensing Ethernet port LED | See Table 21 . |
| SFP+ port LED | See Table 22 . |

System status LED

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

Table 18 System status LED description

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

| LED mark | Status | Description |
|----------|------------------------|--|
| | Flashing yellow (1 Hz) | Some ports have failed to pass POST or are faulty. |
| | Off | The switch is powered off. |

RPS status LED

The switch supports RPS input. The RPS status LED shows the status of the RPS input.

Table 19 RPS status LED description

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

Management Ethernet port LEDs

Each switch provides a management Ethernet port LED to indicate the operating state of the management Ethernet port.

Table 20 Management Ethernet port LED description

| Management Ethernet port LED (MGMT) status | Description |
|--|---|
| Steady green | A link is present on the port and the port is operating at 1000 Mbps. |
| Flashing green | The port is sending or receiving data at 1000 Mbps. |
| Steady yellow | A link is present on the port and the port is operating at 10/100 Mbps. |
| Flashing yellow | The port is sending or receiving data at 100 or 10 Mbps. |
| Off | No link is present. |

1/10GBASE-T autosensing Ethernet port LED

Table 21 1/10GBASE-T autosensing Ethernet port LED description

| 1/10GBASE-T autosensing Ethernet port LED status | Description |
|--|---|
| Steady green | A link is present on the port and the port is operating at 10 Gbps. |
| Flashing green | The port is sending or receiving data at 10 Gbps. |
| Steady yellow | A link is present on the port and the port is operating at 1 Gbps. |
| Flashing yellow | The port is sending or receiving data at 1 Gbps. |
| Flashing yellow (3 Hz) | The port has failed POST. |

| 1/10GBASE-T autosensing Ethernet port LED status | Description |
|--|---------------------------------|
| Off | No link is present on the port. |

SFP+ port LED

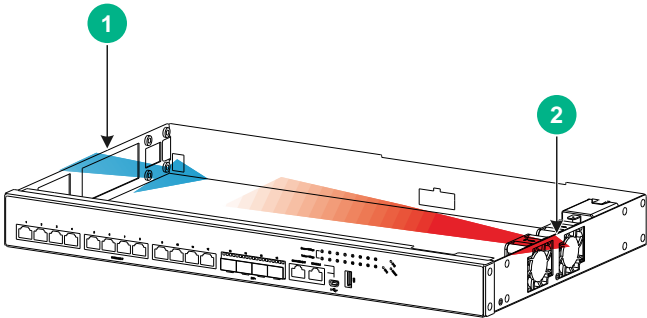
Table 22 SFP+ port LED description

| SFP+ port LED status | Description |
|------------------------|---|
| Steady green | A link is present on the port and the port is operating at 10 Gbps. |
| Flashing green | The port is sending or receiving data at 10 Gbps. |
| Steady yellow | A link is present on the port and the port is operating at 1 Gbps. |
| Flashing yellow | The port is sending or receiving data at 1 Gbps. |
| Flashing yellow (3 Hz) | The port has failed POST. |
| Off | No link is present on the port. |

Appendix C Cooling system

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

Figure 29 Airflow through the HPE 1950 12XGT 4SFP+ Switch



(1) Air inlets

(2) Built-in fan air vents

Document conventions and icons

Conventions

This section describes the conventions used in the documentation.

Port numbering in examples

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





Command conventions

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













GUI conventions

| Convention | Description |
|-----------------|---|
| Boldface | Window names, button names, field names, and menu items are in Boldface. For example, the New User window 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

| Convention | Description |
|---|--|
|  | Represents a generic network device, such as a router, switch, or firewall. |
|  | Represents a routing-capable device, such as a router or Layer 3 switch. |
|  | Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features. |
|  | Represents an access controller, a unified wired-WLAN module, or the access controller engine on a unified wired-WLAN switch. |
|  | Represents an access point. |
|  | Represents a wireless terminator unit. |
|  | Represents a wireless terminator. |
|  | Represents a mesh access point. |
|  | Represents omnidirectional signals. |
|  | Represents directional signals. |
|  | Represents a security product, such as a firewall, UTM, multiservice security gateway, or load balancing device. |
|  | Represents a security card, such as a firewall, load balancing, NetStream, SSL VPN, IPS, or ACG card. |

Support and other resources

Accessing Hewlett Packard Enterprise Support

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

Information to collect

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

Accessing updates

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

ⓘ **IMPORTANT:**

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

Websites

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

Customer self repair

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

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

www.hpe.com/support/selfrepair

Remote support

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

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

www.hpe.com/info/insightremotesupport/docs

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

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