

HP 1410 Switch Series Getting Started Guide

HP 1410-24-R Switch (JD986B)

HP 1410-24G-R Switch (JG708A)

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Product Overview

HP 1410 series switches are unmanaged Fast Ethernet and Gigabit Ethernet switches designed for small businesses looking for entry-level, low-cost networking solutions with a lifetime warranty. The HP 1410 switch series consists of nine models with flexible mounting options that allow customers to choose the best switch to meet their network switching needs. All models have QoS support and IEEE 802.3x flow control features to provide outstanding data efficiency. Simplified plug-and-play operation is enabled by features like Auto-MDIX and auto-speed negotiation. HP has innovated and combined the latest advances in silicon technology to provide some of the most power-efficient switches: 1410-16, 1410-24 and 1410-24G-R models are the industry's first IEEE 802.3az compliant unmanaged Fast Ethernet switches. The available green features, along with the HP lifetime warranty, make the HP 1410 switch series ideal for customers seeking low-cost and reliable networking solutions.

The HP 1410 Switch Series includes the models in [Table 1](#).

Table 1 HP 1410 Switch Series models

Product code	HP description	Alias
J9559A	HP 1410-8G Switch	1410-8G
J9560A	HP 1410-16G Switch	1410-16G
J9561A	HP 1410-24G Switch	1410-24G
JD986B	HP 1410-24G-R Switch	1410-24G-R
J9661A	HP 1410-8 Switch	1410-8
J9662A	HP 1410-16 Switch	1410-16
J9663A	HP 1410-24 Switch	1410-24
JG708A	HP 1410-24-R Switch	1410-24-R
J9664A	HP 1410-24-2G Switch	1410-24-2G

This Getting Started Guide covers HP 1410-24-R and 1410-24G-R switches. These models are 24-port unmanaged Fast Ethernet and Gigabit Ethernet switches with full rackwidth and internal power supply.

Please contact HP local sales for the product availability.

Preparing for installation


Safety recommendations


WARNING!

Before installation and operation, read all of the safety instructions in the *Compliance and Safety Guide* supplied with your device.

Safety symbols

When reading this document, note the following symbols:

 WARNING means an alert that calls attention to important information that if not understood or followed can result in personal injury.

 CAUTION means 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.

General 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.

- Do not place the switch on an unstable case or desk. The switch might be severely damaged in case of a fall.
- Make sure the ground is dry and flat and anti-slip measures are in place.
- Keep the chassis and installation tools away from walk areas.
- Keep the chassis clean and dust-free.
- Do not place the switch near water or place it in a damp environment. Prevent water or moisture from entering the switch chassis.
- To prevent condensation, unpack the switch at least half an hour after you move the switch from a location below 0°C (32°F) to the equipment room. Power on the switch at least 2 hours after you move the switch from a location below 0°C (32°F) to the equipment room.
- Ensure proper ventilation of the equipment room, and keep the air inlet and outlet vents of the switch free of obstruction.
- Make sure the operating voltage is in the required range.
- Use a screw driver to fasten screws.

Electrical safety

- Carefully examine your work area for possible hazards, like moist floors, ungrounded power extension cables, or missing safety grounds.
- Locate the emergency power-off switch in the room before installation. Shut off the power immediately if an accident occurs.
- Unplug all the external cables (including power cables) before moving the chassis.
- Do not work alone when you operate the switch with the switch powered on.
- Always check that the power has been disconnected when you perform operations that require the switch to be powered off.

Examining the installation site

The HP 1410 switches must be used indoors. To ensure correct operation and a long lifespan for your switch, the installation site must meet the requirements in this section.

Temperature/humidity

Maintain appropriate temperature and humidity in the equipment room.

- Lasting high relative humidity can cause poor insulation, electric creepage, mechanical property change of materials, or metal corrosion.
- Lasting low relative humidity can cause washer contraction and ESD, and can cause 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.

Maintain temperature and humidity in the equipment room, as described in [Table 2](#).

Table 2 Temperature/humidity requirements in the equipment room

Temperature	Relative humidity
0°C to 45°C (32°F to 113°F)	5% to 95%, noncondensing

Cleanness

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

To ensure correct operation, the equipment room must meet the dust concentration requirements listed in [Table 3](#).

Table 3 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, as shown in [Table 4](#), to eliminate corrosion and premature aging of components.

Table 4 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

ESD prevention

To prevent electrostatic discharge (ESD), follow these guidelines:

- Ground the switch correctly.
- Take dust-proof measures for the equipment room.
- Maintain the humidity and temperature at a proper level.
- Always wear an ESD-preventive wrist strap. Make sure the wrist strap makes skin contact and is well grounded.

NOTE:

The ESD-preventive wrist strap is not provided with the switch. Order it yourself.

EMI

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

- Capacitance coupling
- Inductance coupling
- Electromagnetic wave radiation
- Common impedance (including the grounding system) coupling
- Cables (power cords, signal cables, and output cables)

To prevent EMI:

- If the AC power supply system is a TN system, use a single-phase three-wire power receptacle with protection earth (PE) to filter interference from the power grid.

- Keep the switch far away from radio transmitting stations, radar stations, and high-frequency devices.
- Use electromagnetic shielding, for example, shielded interface cables, when necessary.
- Route interface cables indoors.

Lightning protection

To better protect the switch from lightning, follow these guidelines:

- Make sure the grounding cable of the chassis is well grounded.
- Make sure the grounding terminal of the AC power receptacle is well grounded.

Installation preparation checklist

Table 5 Installation preparation checklist

Item	Requirements	Result
Installation site	Ventilation	<ul style="list-style-type: none"> • There is a minimum clearance of 10 cm (3.9 in) around the inlet and outlet vents for heat dissipation of the switch chassis. • A ventilation system is available at the installation site.
	Temperature	0°C to 45°C (32°F to 113°F)
	Relative humidity	5% to 95% (noncondensing)
	Cleanness	<ul style="list-style-type: none"> • Dust concentration $\leq 3 \times 10^4$ particles/m³ • No dust on desk within three days.
	ESD prevention	<ul style="list-style-type: none"> • The equipment and rack are well grounded. • The equipment room is dust-proof. • The humidity and temperature are at a proper level. • Wear an ESD-preventive wrist strap. Make sure the wrist strap makes good skin contact and is well grounded.
	EMI prevention	<ul style="list-style-type: none"> • Take effective measures to protect the power system from the power grid system. • Separate the protection ground of the switch from the grounding device or lightning protection grounding device as far as possible. • Keep the switch far away from radio stations and radar and high-frequency devices working in high current. • Use electromagnetic shielding when necessary.
	Lightning protection	<ul style="list-style-type: none"> • The grounding cable of the chassis is well grounded. • The grounding terminal of the AC power receptacle is well grounded.
	Electricity safety	<ul style="list-style-type: none"> • Equip a UPS. • In case of emergency during operation, switch off the external power switch.

Item	Requirements	Result
Rack-mounting requirements	<ul style="list-style-type: none"> • Install the switch in an open rack if possible. If you install the switch in a closed cabinet, make sure that the cabinet is equipped with a good ventilation system. • The rack is sturdy enough to support the weight of the switch and installation accessories. • The size of the rack is appropriate for the switch. • The front and rear of the rack are at least 0.8 m (31.50 in) away from walls or other devices. 	
Safety precautions	<ul style="list-style-type: none"> • The switch is far away from any moist area and heat source. • You have located the emergency power switch in the equipment room. 	
Accessories	Accessories shipped with the switch	
Reference	<ul style="list-style-type: none"> • Documents shipped with the switch. • Online documents. 	

Installing the switch

The HP 1410 switch can be installed in a 19-inch rack or on a workbench. The installation procedures for the HP 1410-24-R switch and the HP 1410-24G-R switch are the same. The following installation procedure uses the HP 1410-24-R switch as an example.

⚠ WARNING!

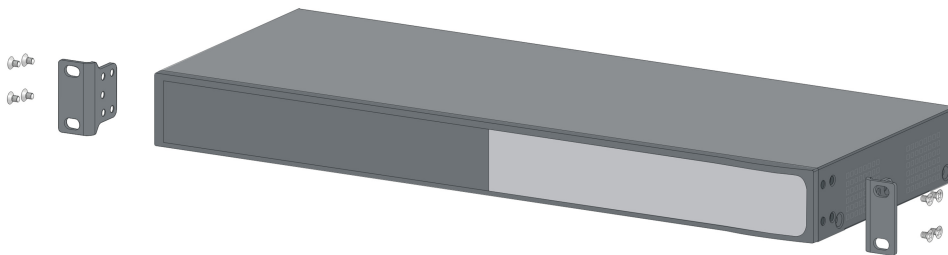
Before installing or moving the switch, remove the power cord.

Mounting the switch in a 19-inch rack with mounting brackets

To install the switch with mounting brackets:

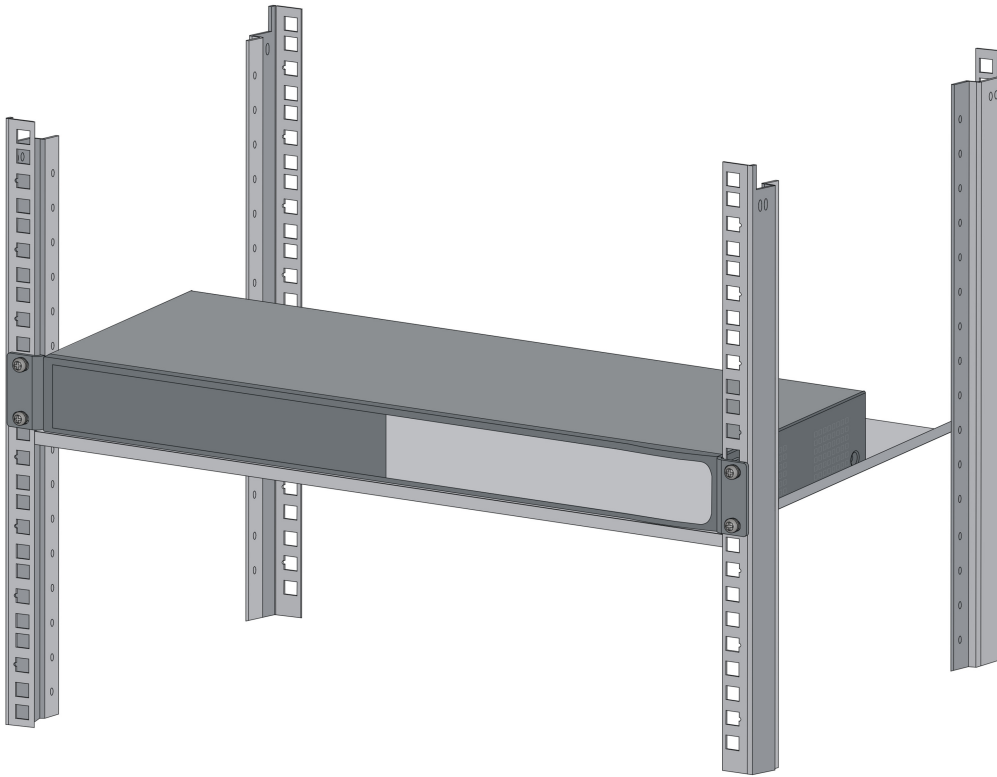
1. Wear an ESD-preventive wrist strap, and make sure the rack is securely grounded and is stable.
2. Attach the mounting brackets on the sides of the front panel with screws.

Figure 1 Installing the mounting brackets to the HP 1410-24-R switch



3. Place the switch on a holder in the rack, and push in the switch along the guide rails until the oval holes in the brackets align with the mounting holes in the rack posts.
4. Attach the mounting brackets to the rack posts with screws.

Figure 2 Mounting the HP 1410-24-R switch in the rack



NOTE:

The mounting brackets are used only for attaching the switch instead of bearing the switch weight. A holder on the rack is used to hold (bear the weight of) the switch.

Mounting the switch on a workbench

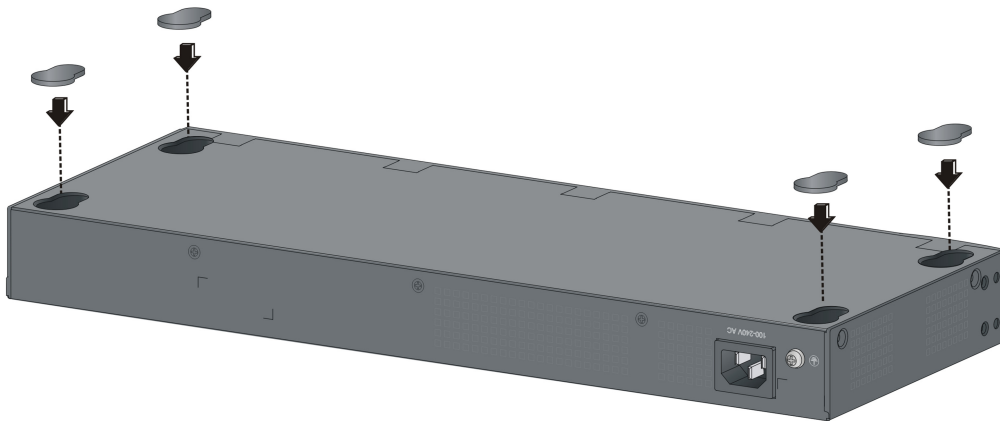
! **IMPORTANT:**

- 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. Make sure the workbench is securely grounded and is stable.
2. Place the switch upside down, and clean the round holes on the bottom of the chassis with a dry cloth.
3. Attach the rubber feet to the four round holes on the bottom of the chassis.
4. Place the switch with right side up on the workbench.

Figure 3 Attaching rubber feet

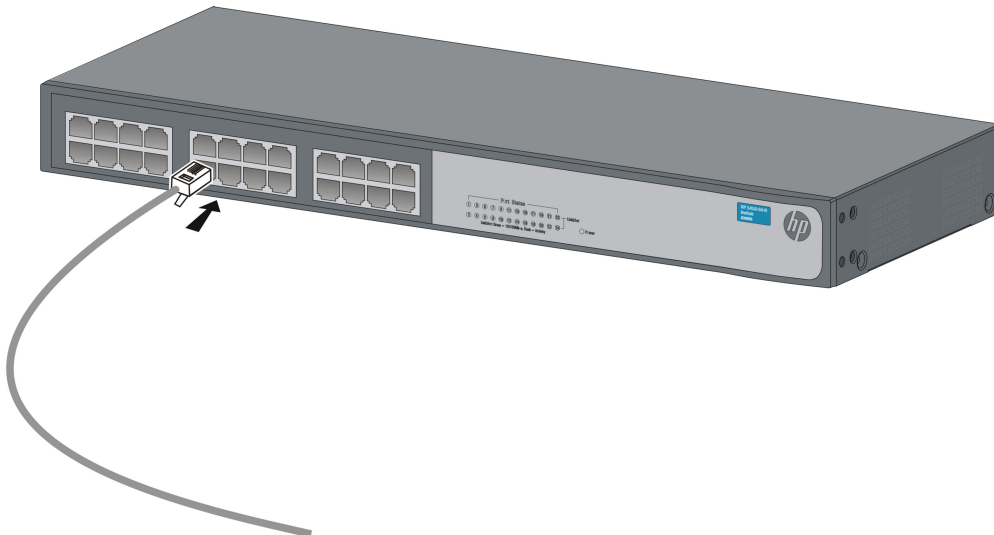


Connecting cables

Connecting network cable

Use crossover cables or straight-through cables to connect a PC or other network devices to the Ethernet port of the switch.

Figure 4 Connecting network cable



Connecting the AC power cord

⚠ WARNING!

Make sure the grounding cable is securely connected and the switch is well grounded before connecting the AC power cord.

1. Make sure the correct power source is used.
2. Connect one end of the AC power cord to the AC-input power receptacle on the switch.
3. Connect the other end of the AC power cord to the AC power outlet.
4. Check the Power LED.

If it is ON, it means the power connection is correct.

Verifying the installation

After you complete the installation, verify that:

- There is enough space for heat dissipation around the switch, and the rack or workbench is stable.
- The grounding cable is securely connected.
- The correct power source is used.
- All the interface cables are cabled indoors.

Troubleshooting

This chapter lists issues and solutions while using and managing the switch. If you encounter an issue that is not listed and you cannot solve it, contact HP Technical Support.

Table 6 Troubleshooting

Symptom	Troubleshooting method
Power LED off	<ol style="list-style-type: none">1. Verify that the correct power source is used and the power cords are correctly connected.2. Verify that the power source side provides power supply correctly.
LAN interface LED off	<ol style="list-style-type: none">1. Verify that the network cable is correctly connected to the network port of the switch.2. Plug the two ends of a network cable into two network ports of the switch. If the port LEDs are on, it indicates that the network cable is operating correctly. Otherwise, replace the network cable.

Appendix A Chassis views and technical specifications

Chassis views

The HP1410 Switch Series includes the models in [Table 7](#). For availability information about the models, contact HP sales.

Table 7 HP 1410 Switch Series models

Product code	HP description	Alias
JD986B	HP 1410-24-R Switch	1410-24-R
JG708A	HP 1410-24G-R Switch	1410-24G-R

! **IMPORTANT:**

For regulatory identification purposes, the HP 1410 Switch Series products are assigned Regulatory Model Numbers (RMN). The Regulatory Model Numbers for these products are listed below. These regulatory numbers should not be confused with the marketing names HP 1410, or product numbers JD986B and JG708A

Table 8 Regulatory Model Numbers in the HP 1410 Switch Series

Product code	RMN	HP description
JD986B	HNGZA-HA0006	HP 1410-24-R Switch
JG708A	HNGZA-HA0007	HP 1410-24G-R Switch

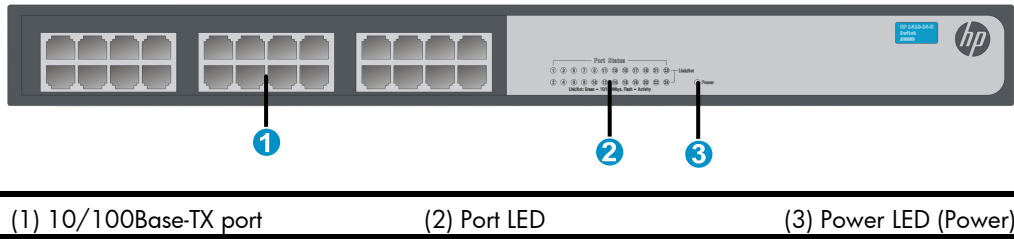
NOTE:

The figures in this document are for illustration only.

1410-24-R switch

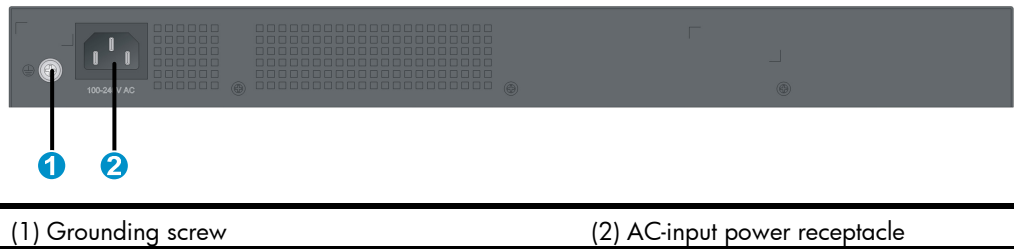
Front panel

Figure 5 1410-24-R front panel



Rear panel

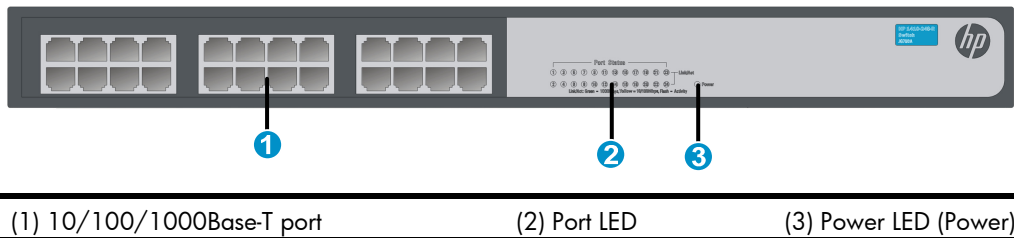
Figure 6 1410-24-R rear panel



1410-24G-R switch

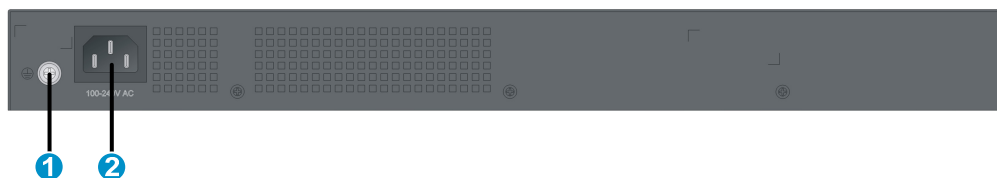
Front panel

Figure 7 1410-24G-R front panel



Rear panel

Figure 8 1410-24G-R rear panel



(1) Grounding screw

(2) AC-input power receptacle

Technical specifications

Table 9 Technical specifications

Item	1410-24-R	1410-24G-R
Dimensions (H × W × D)	44 × 440 × 173 mm (1.73 × 17.32 × 6.81 in)	44 × 440 × 173 mm (1.73 × 17.32 × 6.81 in)
Weight	≤ 2.5 kg (5.51 lb)	≤ 3 kg (6.61 lb)
Ethernet port	24 × 10/100Base-TX ports	24 × 10/100/1000Base-T ports
Input AC voltage	Rated voltage range: 100 VAC to 240 VAC @ 50 Hz or 60 Hz	
Power consumption (full configuration)	< 6 W	< 16 W
Operating temperature	0°C to 40°C (32°F to 104°F)	
Relative humidity	5% to 95%, noncondensing	
Cooling system	No fans for heat ventilation	

Appendix B LEDs

The LEDs on the front panel show the operation status of the switch.

Power LED

Table 10 Power LED description

LED	Status	Description
Power	Steady green	The switch is operating correctly.
	Flashing green	The system is performing power-on self-test (POST).
	Off	The switch is powered off or the power supply has failed.

Ethernet copper port LEDs

Table 11 Ethernet copper port LEDs

LED	Status	Description
10/100BASE-TX port	Steady green	The port is operating at 10/100 Mbps.
	Flashing green	The port is sending or receiving data at 10/100 Mbps.
	Off	No link is present on the port.
Link/Act	Steady green	The port is operating at 1000 Mbps.
	Flashing green	The port is sending or receiving data at 1000 Mbps.
	Steady yellow	The port is operating at 10/100 Mbps.
10/100/1000BASE-T port	Flashing yellow	The port is sending or receiving data at 10/100 Mbps.
	Off	No link is present on the port.

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>

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