**RETIRED:** This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.



## Overview

### HPE OfficeConnect 1950 Switch Series

The HPE OfficeConnect 1950 Series is a smart Web-managed 10-Gigabit and Gigabit platform for advanced small business networks needing highest performance now or in the future.

The HPE OfficeConnect 1950 Switch Series includes five switches: New to the series is a 16-port 10-Gigabit aggregation switch that has 12 10GBASE-T and 4 SFP+ ports, which is ideal as the core of a high performance workgroup or small business network. Additional series models have Gigabit access ports with 10-Gigabit uplinks, including two standard and two PoE+ models in 24- and 48-port configurations. The access switches each have two 10GBASE-T ports supporting copper- based Category 6A-based cabling, and two 10G SFP+ ports for fiber connectivity. The PoE+ models both have a PoE power budget of 370 W to power up PoE/PoE+ compliant client devices.

The HPE OfficeConnect 1950 Switch Series has an intuitive Web-based interface for simple customization of network operation. It supports true-stacking, the aggregation switch supporting up to two devices, while the access switches allowing up to four devices, to be logically administered as a single entity, simplifying administration while supporting greater network redundancy. Models support both rack mounting and desktop operation. These switches have IPv4 and IPv6 operation, with Layer 2 switching as well as Layer 3 static routing. Other features include: link aggregation to boost link performance; VLANs, Access Control Lists, and 802.1X network login for enhanced security; and three versions of Spanning Tree Protocol (STP) for added network resiliency. HPE OfficeConnect 1950 Switch Series is covered by a Limited Lifetime Warranty.



**HPE OfficeConnect 1950 Switch Series**

# Overview

## Models

| | |
|---|---|
| HPE OfficeConnect 1950 12XGT 4SFP+ Switch | JH295A |
| HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch | JG960A |
| HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch | JG961A |
| HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch | JG962A |
| HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch | JG963A |

## Key features

- 10G Connectivity for fast network to servers and storage
- Combination of SFP+ and 10GBASE-T ports—supports both fiber and cost-effective copper connectivity
- True stacking allows for redundancy while simplifying administration
- Customized operation using intuitive Web interface
- Limited Lifetime warranty

# Standard Features

## Management

- **Four-high true stacking**
  Simplifies administration of multiple devices. Create a single logical managed unit with up to four HPE OfficeConnect 1950 switches. Balance connections across multiple units with standard Link Aggregation (LACP) for enhanced network resiliency. Stack using affordable Cat 6a, or long distance fiber, or localized DAC cables. Stacked units can be co-located or separated physically.
- **Intuitive Web browser-based management**
  Allows for easy customization of the switch even by non-technical users.
- **Secure Web-management sessions with HTTPS / SSL**
  Encrypts and otherwise protects management sessions through HTTP Secure (HTTPS). Prevents snooping of sensitive management information such as passwords.
- **SNMPv1, v2c, and v3**
  Facilitates remote management of the switch, as the device can be discovered and monitored from an SNMP management station
- **Complete session logging**
  Provides detailed information for problem identification and resolution
- **Dual flash images**
  Provides independent primary and secondary operating system files for backup while upgrading
- **Port mirroring**
  Enables traffic on a port to be simultaneously sent to a network analyzer for monitoring
- **Network Time Protocol (NTP)**
  Synchronizes timekeeping among distributed time servers and clients; keeps timekeeping consistent among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **Limited Command Line Interface (CLI)**
  Facilitates in the deployment and initial configuration of the unit. Supports troubleshooting actions as well.
- **RMON**
  Provides advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Default DHCP client modes**
  Simplifies device deployment. Connect a new out-of-the box switch to a network with a DHCP server and the device will obtain its IP address automatically with plug-and-play operation. In the absence of a DHCP server, the switch will fall-back to a unique static address determined by the switch's MAC address.
- **Cable diagnostic tool**
  Use to remotely detect cable issues with cables attached to the switch.

## Quality of Service (QoS)

- **Broadcast control**
  Allows limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic
- **Rate limiting**
  Sets per-port ingress enforced maximums and per-port, per-queue minimums
- **Traffic prioritization**
  Makes it possible to prioritize important and/or time-sensitive traffic ahead of less important traffic. Use with VoIP or video to optimize its performance on the network. Recognizes both IEEE 802.1p and DSCP prioritization tagging. Packets are mapped to four hardware queues for more effective throughput.
- **Powerful QoS feature**
  Supports the following congestion actions: strict priority queuing (SP), weighted round robin (WRR) queuing, and SP+WRR

# Standard Features

## Connectivity

- **Auto-MDI/MDIX**
  Adjusts automatically to straight-through or crossover cables on all 10/100/1000 and 10GBASE-T ports.
- **IEEE 802.3X flow control**
  Provides a configurable flow throttling mechanism propagated through the network to prevent packet loss at a congested node.
- **Packet storm protection**
  Protects against broadcast, multicast, or unicast storms with user-defined thresholds
- **Jumbo frame support up to 10-kilobyte frames**
  Improves efficiency of data transfers by allowing more data into a given packet. This especially useful for transfers of large amounts of data. HPE 1950 Switches support up to 10 kilobyte frame sizes.
- **IEEE 802.3at Power over Ethernet (PoE+)**
  Delivers power to compliant devices over Ethernet cabling, greatly simplifying installation of those devices. The HPE OfficeConnect 1950 Series has two PoE+ enabled models. The PoE+ 802.3at standard supports delivery of up to 30 Watts of power to the attached devices, enough to support the latest models of IP phones, Wireless Access Points, video surveillance cameras, or other PoE/PoE+ enabled devices. HPE 1950 PoE+ models support 370W of total PoE power.
- **IEEE 802.3af Power over Ethernet (PoE) ready**
  Delivers power to compliant devices over Ethernet cabling, greatly simplifying installation of those devices. HPE 1950 PoE+ models are fully backward compliant with the older PoE standard which provides up to 15.4 Watts of PoE power per port to attached devices.
- **Available redundant power for PoE+ models**
  Optional Redundant Power System is available to add power redundancy and to supplement the PoE power of the PoE+ switches. With the optional RPS, the PoE+ power budget can be increased to 740 Watts; additionally, the switch will continue operating and powering downstream PoE devices even if the unit internal power supply should fail. Order the HPE RPS1600 Redundant Power System (JG136A).
- **Fully IPv6 capable**
  - **IPv6 host**
    enables switches to be managed and deployed at the IPv6 network's edge
  - **IPv6 routing**
    supports IPv6 static routes
  - **MLD snooping**
    forwards IPv6 multicast traffic to the appropriate interface, preventing traffic flooding
  - **IPv6 ACL/QoS**
    supports ACL and QoS for IPv6 network traffic

## Security

- **Access Control Lists (ACLs)**
  Gives granular control over what traffic goes where in the network. Allows for traffic filtering. ACLs rules can be based on MAC-address or IP-address. ACL rules can be time-based to implement access control during certain hours or days.
- **IEEE 802.1X and RADIUS network logins**
  Controls port-based access for authentication and accountability
- **Automatic VLAN assignment**
  Assigns users automatically to the appropriate VLAN based on their identity, location and time of day
- **Port isolation**
  The port isolation feature isolates Layer 2 traffic for data privacy and security without using VLANs. This feature can also be used to isolate the hosts in a VLAN from one another
- **ARP attack protection**
  The ARP detection feature enables access devices to block ARP packets from unauthorized clients to prevent user spoofing and gateway spoofing attacks
- **STP BPDU port protection**
  Blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

## Standard Features

- **STP root guard**
  Protects the root bridge from malicious attacks or configuration mistakes
- **Automatic denial-of-service protection**
  Protects the network by blocking malicious DoS attacks aimed at the switch itself.
- **Management password**
  Provides security so that only authorized access to the Web browser interface is allowed

### Performance

- **Half-/full-duplex auto-negotiating capability on every port**
  Doubles the throughput of every port
- **Selectable queue configurations**
  Allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications
- **IGMP / MLD Snooping**
  Improves network performance by filtering multicast traffic when there is no multicast receiver on a connection. Without this, multicast traffic is flooded to all ports. IGMP snooping is used in IPv4 networks. The IPv6 equivalent MLD Snooping is also supported.
- **10-Gigabit SFP+ based Fiber Uplinks**
  Supports high-bandwidth connections over fiber. HPE 1950 Switches each have two SFP+ transceiver slots supporting 10-Gigabit fiber-based connections using optional 10G transceivers. Fiber is particularly suited for connecting at distances beyond the 100 Meter limitation of copper-based Cat 5e cabling. Alternatively use the SFP+ ports for redundant stacking of up to four units using Direct Attached Cables (DAC).
- **10-Gigabit 10GBASE-T RJ45 Uplinks**
  Supports high-bandwidth connections over Cat 6a cabling. HPE 1950 Switches each have two 10GBASE-T RJ45 ports supporting 10-Gigabit copper-based connections. Cat 6a is economical and practical for distances up to 100 meters. Alternatively use the 10GBASE-T ports for redundant stacking of up to four units.

### Layer 2 switching

- **VLAN support and tagging**
  Supports IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- **Spanning Tree Protocol (STP)**
  Supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **BPDU filtering**
  Improves network efficiency by filtering unnecessary BPDU packets on a port. When Spanning Tree Protocol (STP) is enabled globally but disabled on specific ports, BPDU packets are not sent out the ports where STP is disabled.

### Layer 3 services

- **Address Resolution Protocol (ARP)**
  Determines the MAC address of another IP host in the same subnet; supports static ARPs; gratuitous ARP allows detection of duplicate IP addresses; proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **DHCP relay**
  Simplifies management of DHCP addresses in networks with multiple subnets

### Layer 3 routing

- **Static IPv4/IPv6 routing**
  Provides basic routing (supporting up to 32 static routes and 8 virtual VLAN interfaces); allows manual routing configuration

# Standard Features

## Resiliency and high availability

- **Link aggregation**
  Groups together up to 8 ports per trunk automatically using Link Aggregation Control Protocol (LACP), or manually, to form an ultra-high-bandwidth connection to the network backbone; helps prevent traffic bottlenecks. The switch supports up to 128 trunks.

## Convergence

- **LLDP-MED (Media Endpoint Discovery)**
  Defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to configure automatically network devices such as IP phones
- **Auto voice VLAN**
  Recognizes IP phones and automatically assigns voice traffic to dedicated VLAN for IP phones
- **PoE Models For Converged Voice / Data Networks**
  Simplifies and lowers the cost of installing a converged infrastructure. Power IP phones, Access Points, Video Surveillance cameras, or other PoE-enabled devices. HPE 1950 Switches support multiple methods of allocating PoE power -- IEEE 802.3af class, LLDP-MED, or user-specified -- for more efficient energy useage.

## Additional information

- **Green initiative support**
  Provides support for RoHS and WEEE regulations
- **Green IT and power**
  Improves energy efficiency through the use of the latest advances in silicon development; shuts off unused ports and utilizes variable-speed fans, reducing energy costs
- **Energy Efficient Ethernet**
  Compliant with IEEE 802.3az standard requirements to save energy during periods of low data activity

## Warranty and support

- **Limited Lifetime Warranty**
  See **http://www.hpe.com/officeconnect/support** for warranty and support information included with your product purchase.

## Configuration Information

**Build To Order**: BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

### BTO Models

| Rule # | Description | SKU |
|---|---|---|
| 1, 2 | HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch<br>• 24 RJ-45 auto-negotiating 10/100/1000 ports<br>• 2 SFP+ fixed 1000/10000 SFP+ ports<br>• min=0 \ max=2 SFP+ Transceivers<br>• 2 RJ-45 1/10GBASE-T port<br>• 1U - Height | JG960A |
| | HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch PDU Cable NA/JP/TW<br>• C15 PDU Jumper Cord (NA/MX/TW/JP) | JG960A#B2B |
| | HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch PDU Cable ROW<br>• C15 PDU Jumper Cord (ROW) | JG960A#B2C |
| | HPE 1950-24G-2SFP+-2XGT Switch<br>• No Localized Power Cord Selected | JG960A#AC3 |
| 1, 2 | HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch<br>• 48 RJ-45 auto-negotiating 10/100/1000 ports<br>• 2 SFP+ fixed 1000/10000 SFP+ ports<br>• min=0 \ max=2 SFP+ Transceivers<br>• 2 RJ-45 1/10GBASE-T ports<br>• 1U - Height | JG961A |
| | HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch PDU Cable NA/JP/TW<br>• C15 PDU Jumper Cord (NA/MX/TW/JP) | JG961A#B2B |
| | HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch PDU Cable ROW<br>• C15 PDU Jumper Cord (ROW) | JG961A#B2C |
| | HPE 1950-48G-2SFP+-2XGT Switch<br>• No Localized Power Cord Selected | JG961A#AC3 |
| 1, 2 | HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch<br>• 24 RJ-45 auto-negotiating 10/100/1000 PoE+ ports<br>• 2 SFP+ fixed 1000/10000 SFP+ ports<br>• min=0 \ max=2 SFP+ Transceivers<br>• 2 RJ-45 1/10GBASE-T ports<br>• 1U - Height | JG962A |
| | HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch PDU Cable NA/JP/TW<br>• C15 PDU Jumper Cord (NA/MX/TW/JP) | JG962A#B2B |
| | HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch PDU Cable ROW<br>• C15 PDU Jumper Cord (ROW) | JG962A#B2C |
| | HPE 1950-24G-2SFP+-2XGT-PoE+ Switch<br>• No Localized Power Cord Selected | JG962A#AC3 |
| 1, 2 | HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch<br>• 48 RJ-45 auto-negotiating 10/100/1000 PoE+ ports<br>• 2 SFP+ fixed 1000/10000 SFP+ ports<br>• min=0 \ max=2 SFP+ Transceivers<br>• 2 RJ-45 1/10GBASE-T ports<br>• 1U - Height | JG963A |
| | HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch PDU Cable NA/JP/TW<br>• C15 PDU Jumper Cord (NA/MX/TW/JP) | JG963A#B2B |

## Configuration Information

| | | |
|---|---|---|
| | HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch PDU Cable ROW | JG963A#B2C |
| | • C15 PDU Jumper Cord (ROW) | |
| | HPE 1950-48G-2SFP+-2XGT-PoE+ Switch | JG963A#AC3 |
| | • No Localized Power Cord Selected | |
| 1, 2 | HPE OfficeConnect 1950 12XGT 4SFP+ Switch | JH295A |
| | • 12 RJ-45 1/10GBASE-T ports | |
| | • 4 SFP+ fixed 1000/10000 SFP+ ports | |
| | • min=0 \ max=4 SFP+ Transceivers | |
| | • 1U - Height | |
| | HPE OfficeConnect 1950 12XGT 4SFP+ Switch PDU NA, JP or TW | JH295A#B2B |
| | • C15 PDU Jumper Cord (NA/MX/TW/JP) | |
| | HPE OfficeConnect 1950 12XGT 4SFP+ Switch PDU ROW | JH295A#B2C |
| | • C15 PDU Jumper Cord (ROW) | |
| | HPE OfficeConnect 1950 12XGT 4SFP+ Switch | JH295A#AC3 |
| | • No Localized Power Cord Selected | |

**Configuration Rules**

| Rule # | Description | SKU |
|---|---|---|
| 1 | The following Transceivers install into this switch: | |
| | Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver | R9D16A |
| | HPE X120 1G SFP LC SX Transceiver | JD118B |
| | HPE X120 1G SFP LC LX Transceiver | JD119B |
| | HPE X120 1G SFP RJ45 T Transceiver | JD089B |
| | Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver | R9D18A |
| | HPE X130 10G SFP+ LC SR Transceiver | JD092B |
| | HPE X130 10G SFP+ LC LR Transceiver | JD094B |
| | HPE X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Campus-Cable | JH695C |
| | HPE X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Campus-Cable | JH696C |
| | HPE X240 10G SFP+ to SFP+ 3m Direct Attach Copper Campus-Cable | JH697C |
| 2 | Localization (Wall Power Cord) required on orders without #B2B or #B2C (PDU Power Cord). (See Localization Menu) | |
| **Remarks** | Drop down under power supply should offer the following options and results: Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO) Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO) | |

# Configuration Information

## Transceivers

| Rule # | Description | SKU |
|---|---|---|
| | **SFP Transceivers** | |
| | Aruba Instant On 1G SFP LC SX 500m OM2 MMF Transceiver | R9D16A |
| | HPE X120 1G SFP LC SX Transceiver | JD118B |
| | HPE X120 1G SFP LC LX Transceiver | JD119B |
| | HPE X120 1G SFP RJ45 T Transceiver | JD089B |
| | **SFP+ Transceivers** | |
| | Aruba Instant On 10G SFP+ LC SR 300m OM3 MMF Transceiver | R9D18A |
| | HPE X130 10G SFP+ LC SR Transceiver | JD092B |
| | HPE X130 10G SFP+ LC LR Transceiver | JD094B |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable | JD095C |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable | JD096C |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | JD097C |

## Switch Enclosure Options

| Rule # | Description | SKU |
|---|---|---|
| | **External/Redundant Power Supplies** | |
| 2, 3, 4 | HPE RPS1600 Redundant Power System<br>• Height = 1U<br>• includes 1 x c13, 1600w and Power Supply port | JG136A |
| 1, 3 | HPE RPS1600 1600W AC Power Supply<br>• Installs into JG136A only | JG137A |
| 2, 5 | HPE RPS 800 Redundant Power Supply<br>• Installs into JH295A only | JD183A |

**Configuration Rules**

| Rule # | Description |
|---|---|
| 1 | If this power supply is selected, The JG136A - HPE A-RPS1600 Redundant Power System must be on order or onsite. |
| 2 | Localization required. |
| 3 | Each switch will only support 1 JG136A and 1 JG137A Power supply systems. |
| 4 | This power supply only supported on switches JG962A and JG963A. |
| 5 | This power supply is only supported on switch JH295A |

## External/Redundant Power Cables

| Rule # | Description | SKU |
|---|---|---|
| 1 | HPE X290 1000 A JD5 2m RPS Cable | JD187A |
| 2 | HPE X290 500/800 1m RPS Cable | JD190A |

**Configuration Rules**

| Rule # | Description |
|---|---|
| 1 | This Cable is only supported on switches JG962A and JG963A when used with the RPS 1600 (JG136A) |
| 2 | This Cable is only supported on switch JH295A when used with the RPS 800 (JD183A) |
| **Remarks** | These cables are used to connect the External Power System to Switch. |

## Related Options

### HPE OfficeConnect 1950 Switch Series accessories

| Rule # | Description | SKU |
|---|---|---|
| | **Transceivers** | |
| | HPE X130 10G SFP+ LC SR Transceiver | JD092B |
| | HPE X130 10G SFP+ LC LR Transceiver | JD094B |
| | HPE X120 1G SFP LC SX Transceiver | JD118B |
| | HPE X120 1G SFP LC LX Transceiver | JD119B |
| | HPE X120 1G SFP RJ45 T Transceiver | JD089B |
| | **Cables** | |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable | JD095C |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable | JD096C |
| | HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | JD097C |
| | **HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A)** | |
| | HPE RPS 800 Redundant Power Supply | JD183A |
| | HPE X290 500/800 1m RPS Cable | JD190A |
| | **HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+(370W) Switch (JG962A)** | |
| | HPE RPS1600 Redundant Power System | JG136A |
| | HPE RPS1600 1600W AC Power Supply | JG137A |
| | HPE X290 1000 A JD5 2m RPS Cable | JD187A |
| | **HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+(370W) Switch (JG963A)** | |
| | HPE RPS1600 Redundant Power System | JG136A |
| | HPE RPS1600 1600W AC Power Supply | JG137A |
| | HPE X290 1000 A JD5 2m RPS Cable | JD187A |

## Technical Specifications

| HPE OfficeConnect 1950 12XGT 4SFP+ Switch (JH295A) | | |
|---|---|---|
| **I/O ports and slots** | 12 RJ-45 1/10GBASE-T ports | |
| | 4 SFP+ fixed 1000/10000 SFP+ ports | |
| **Additional ports and slots** | 1 dual-personality (RJ-45 or Mini USB) console port to access limited CLI port<br>1 RJ-45 out-of-band management port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 6.3(d) x 1.73(h) in (44 x 16 x 4.4 cm) (1U height) |
| | **Weight** | 8.07 lb (3.66 kg) |
| **Memory and processor** | Cortex-A9 @ 1.25 MHz, 512 MB flash; Packet buffer size: 2 MB, 1 GB SDRAM | |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 5 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **10 Gbps Latency** | < 1.5 µs |
| | **Throughput** | up to 238 Mpps (64-byte packets) |
| | **Routing/Switching capacity** | 320 Gbps |
| | **Routing table size** | 512 entries (IPv4), 256 entries (IPv6) |
| | **MAC address table size** | 16384 entries |
| **Reliability** | **MTBF (years)** | 81.8 |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 10% to 90%, noncondensing |
| | **Non-operating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Non-operating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Altitude** | up to 16,404 ft (5 km) |
| | **Acoustic** | Low-speed fan: 48.1 dB, High-speed fan: 59.8 dB; ISO 7779 Dual speed fan |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Maximum power rating** | 75 W |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 61000-3-2 2000, 61000-3-3; ICES-003 Class A | |
| **Management** | IMC - Intelligent Management Center; Limited command-line interface; Web browser; SNMP manager; HTTPS; RMON1; FTP; Supported by HP IMC and generic SNMP management platforms. Refer to documentation for MIB support details. | |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

## Technical Specifications

| HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch (JG960A) | | |
|---|---|---|
| **I/O ports and slots** | 24 RJ-45 auto-negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) | |
| | 2 SFP+ fixed 1000/10000 SFP+ ports | |
| | 2 RJ-45 1/10GBASE-T ports | |
| **Additional ports and slots** | 1 RJ-45 console port to access limited CLI port | |
| **Physical characteristics** | **Dimensions** | 17.17(w) x 6.3(d) x 1.73(h) in (43.6 x 16 x 4.4 cm) (1U height) |
| | **Weight** | 6.61 lb (3 kg) |
| **Memory and processor** | 128 MB flash; Packet buffer size: 1.5 MB, 1 GB SDRAM | |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 5 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **10 Gbps Latency** | < 1.5 µs |
| | **Throughput** | up to 95.2 Mpps (64-byte packets) |
| | **Routing/Switching capacity** | 128 Gbps |
| | **Routing table size** | 32 entries (IPv4), 32 entries (IPv6) |
| | **MAC address table size** | 16384 entries |
| **Reliability** | **MTBF (years)** | 87.2 |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 10% to 90%, noncondensing |
| | **Non-operating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Non-operating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Altitude** | up to 16,404 ft (5 km) |
| | **Acoustic** | Low-speed fan: 19.0 dB, High-speed fan: 44.5 dB; ISO 7779 Dual speed fan |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Maximum power rating** | 34 W |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 61000-3-2 2000, 61000-3-3; ICES-003 Class A | |
| **Management** | IMC - Intelligent Management Center; Limited command-line interface; Web browser; SNMP Manager; HTTPS; RMON1; FTP; Supported by HPE IMC and generic SNMP management platforms. Refer to documentation for MIB support details. | |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

## Technical Specifications

| HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch (JG961A) | | |
|---|---|---|
| **I/O ports and slots** | 48 RJ-45 auto-negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) | |
| | 2 SFP+ fixed 1000/10000 SFP+ ports | |
| | 2 RJ-45 1/10GBASE-T ports | |
| **Additional ports and slots** | 1 RJ-45 console port to access limited CLI port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 10.63(d) x 1.73(h) in (44 x 27 x 4.4 cm) (1U height) |
| | **Weight** | 11.02 lb (5 kg) |
| **Memory and processor** | 128 MB flash; Packet buffer size: 3 MB, 1 GB SDRAM | |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 5 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **10 Gbps Latency** | < 1.5 µs |
| | **Throughput** | up to 130.9 Mpps (64-byte packets) |
| | **Routing/Switching capacity** | 176 Gbps |
| | **Routing table size** | 32 entries (IPv4), 32 entries (IPv6) |
| | **MAC address table size** | 16384 entries |
| **Reliability** | **MTBF (years)** | 51 |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 10% to 90%, noncondensing |
| | **Non-operating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Non-operating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Altitude** | up to 16,404 ft (5 km) |
| | **Acoustic** | Low-speed fan: 38.4 dB, High-speed fan: 47.0 dB; ISO 7779 Dual speed fan |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Maximum power rating** | 54 W |
| | **Notes** | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 61000-3-2 2000, 61000-3-3; ICES-003 Class A | |
| **Management** | IMC - Intelligent Management Center; Limited command-line interface; Web browser; SNMP Manager; HTTPS; RMON1; FTP; Supported by HPE IMC and generic SNMP management platforms. Refer to documentation for MIB support details. | |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

## Technical Specifications

| HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch (JG962A) | | |
|---|---|---|
| **I/O ports and slots** | 24 RJ-45 auto-negotiating 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE, IEEE 802.3at) | |
| | 2 SFP+ fixed 1000/10000 SFP+ ports | |
| | 2 RJ-45 1/10GBASE-T ports | |
| **Additional ports and slots** | 1 RJ-45 console port to access limited CLI port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 14.17(d) x 1.73(h) in (44 x 36 x 4.4 cm) (1U height) |
| | **Weight** | 13.23 lb (6 kg) |
| **Memory and processor** | 128 MB flash; Packet buffer size: 1.5 MB, 1 GB SDRAM | |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 5 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **10 Gbps Latency** | < 1.5 µs |
| | **Throughput** | up to 95.2 Mpps (64-byte packets) |
| | **Routing/Switching capacity** | 128 Gbps |
| | **Routing table size** | 32 entries (IPv4), 32 entries (IPv6) |
| | **MAC address table size** | 16384 entries |
| **Reliability** | **MTBF (years)** | 44.4 |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 10% to 90%, noncondensing |
| | **Non-operating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Non-operating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Altitude** | up to 16,404 ft (5 km) |
| | **Acoustic** | Low-speed fan: 37.3 dB, High-speed fan: 47.1 dB; ISO 7779 Dual speed fan |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Maximum power rating** | 425 W |
| | **PoE power** | 370 W PoE+ |
| | **Notes** | – Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.<br>– PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS).<br>– When supplemented with the use of an HPE RPS1600 Redundant Power System, up to 720W of PoE+ can be supplied. Unit max. power consumption with RPS is 750W. |
| **Safety** | UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 61000-3-2 2000, 61000-3-3; ICES-003 Class A | |

## Technical Specifications

| | |
|---|---|
| **Management** | IMC - Intelligent Management Center; Limited command-line interface; Web browser; SNMP Manager; HTTPS; RMON1; FTP; Supported by HPE IMC and generic SNMP management platforms. Refer to documentation for MIB support details. |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. |

| **HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch** (JG963A) | | |
|---|---|---|
| **I/O ports and slots** | 48 RJ-45 auto-negotiating 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE, IEEE 802.3at) | |
| | 2 SFP+ fixed 1000/10000 SFP+ ports | |
| | 2 RJ-45 1/10GBASE-T ports | |
| **Additional ports and slots** | 1 RJ-45 console port to access limited CLI port | |
| **Physical characteristics** | **Dimensions** | 17.32(w) x 16.54(d) x 1.73(h) in (44 x 42 x 4.4 cm) (1U height) |
| | **Weight** | 15.43 lb (7 kg) |
| **Memory and processor** | 128 MB flash; Packet buffer size: 3 MB, 1 GB SDRAM | |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included) | |
| **Performance** | **100 Mb Latency** | < 5 µs |
| | **1000 Mb Latency** | < 5 µs |
| | **10 Gbps Latency** | < 1.5 µs |
| | **Throughput** | up to 130.9 Mpps (64-byte packets) |
| | **Routing/Switching capacity** | 176 Gbps |
| | **Routing table size** | 32 entries (IPv4), 32 entries (IPv6) |
| | **MAC address table size** | 16384 entries |
| **Reliability** | **MTBF (years)** | 26.8 |
| **Environment** | **Operating temperature** | 32°F to 113°F (0°C to 45°C) |
| | **Operating relative humidity** | 10% to 90%, noncondensing |
| | **Non-operating/Storage temperature** | -40°F to 158°F (-40°C to 70°C) |
| | **Non-operating/Storage relative humidity** | 5% to 95%, noncondensing |
| | **Altitude** | up to 16,404 ft (5 km) |
| | **Acoustic** | Low-speed fan: 47.3 dB, High-speed fan: 50.0 dB; ISO 7779 Dual speed fan |
| **Electrical characteristics** | **Frequency** | 50/60 Hz |
| | **Voltage** | 100 - 240 VAC, rated |
| | **Maximum power rating** | 470 W |
| | **PoE power** | 370 W PoE+ |
| | **Notes** | – Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.<br>– PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). |

## Technical Specifications

| | | |
|---|---|---|
| | | – When supplemented with the use of an HPE RPS1600 Redundant Power System, up to 800W of PoE+ can be supplied. Unit max. power consumption with RPS is 910W. |
| **Safety** | UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1 | |
| **Emissions** | FCC part 15 Class A; VCCI Class A; EN 55022 Class A; CISPR 22 Class A; EN 55024; EN 61000-3-2 2000, 61000-3-3; ICES-003 Class A | |
| **Management** | IMC - Intelligent Management Center; Limited command-line interface; Web browser; SNMP Manager; HTTPS; RMON1; FTP;; Supported by HPE IMC and generic SNMP management platforms. Refer to documentation for MIB support details. | |
| **Services** | Refer to the Hewlett Packard Enterprise website at **http://www.hpe.com/networking/services** for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office. | |

## Standards and Protocols (applies to all products in series)

### Device management

- RFC 2819 RMON

### General protocols

- IEEE 802.1D MAC Bridges
- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1W Rapid Spanning Tree Protocol
- IEEE 802.1X
- IEEE 802.3 Type 10BASE-T
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3af Power over Ethernet
- IEEE 802.3at PoE+
- IEEE 802.3i 10BASE-T
- IEEE 802.3x Flow Control
- IEEE 802.3z 1000BASE-X

### Network management

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- IEEE 802.1D (STP)
- RFC 1215 SNMP Generic traps

### QoS/Co

- IEEE 802.1p (CoS)

### Security

- IEEE 802.1X Port Based Network Access Control

## Technical Specifications

### MIBs

- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 2021 RMONv2 MIB
- RFC 2233 Interface MIB
- RFC 2233 Interfaces MIB
- RFC 2571 SNMP Framework MIB
- RFC 2572 SNMP-MPD MIB
- RFC 2573 SNMP-Notification MIB
- RFC 2573 SNMP-Target MIB
- RFC 2613 SMON MIB
- RFC 2618 RADIUS Client MIB
- RFC 2620 RADIUS Accounting MIB
- RFC 2665 Ethernet-Like-MIB
- RFC 2667 IP Tunnel MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
- RFC 2737 Entity MIB (Version 2)
- RFC 3414 SNMP-User based-SM MIB
- RFC 3415 SNMP-View based-ACM MIB
- RFC 3418 MIB for SNMPv3

## Technical Specifications

| Date | Version History | Action | Description of Change: |
|---|---|---|---|
| 07-Feb-2022 | Version 13 | Changed | Configuration Information section was updated. |
| 07-Dec-2020 | Version 12 | Changed | Configuration Information section was updated. |
| 05-Aug-2019 | Version 11 | Changed | Related Options was updated<br>SKU descriptions were updated<br>Obsolete SKUs were removed<br>New SKUs were added |
| 05-Feb-2018 | Version 10 | Changed | Technical Specifications, Configuration and Accessories updated |
| 04-Sep-2017 | Version 9 | Changed | Updates made on Features and benefits |
| 30-May-2017 | Version 8 | Changed | Minor updates made on Technical Specifications |
| 05-Sep-2016 | Version 7 | Added | Model added: JH295A |
| 01-Aug-2016 | Version 6 | Changed | Adding #AC3 Option on Configuration section<br>Technical Specifications updated |
| 06-May-2016 | Version 5 | Changed | Document name changed to HPE OfficeConnect 1950 Switch Series.<br>SKU descriptions, Features and Benefits and Overview updated. |
| 01-Dec-2015 | Version 4 | Changed | Overview and Technical Specifications updated |
| 28-Sep-2015 | Version 3 | Changed | Bundles section added on Accessories. SKUs added: JH376A, JH377A<br>Minor changes on the Overview section |
| 29-Jun-2015 | Version 2 | Changed | Changes made on the Product overview and Features and benefits sections |
| 06-Mar-2015 | Version 1 | New | New QuickSpecs |

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