

## Overview

### HPE OfficeConnect 1950 Switch Series



## Models

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

- Four 10G uplinks for fast connection to servers and storage
- Two SFP+ and two 10GBASE-T ports -- supports fiber and cost-effective copper connectivity
- Four-high stacking allows for redundancy while simplifying administration
- Customized operation using intuitive Web interface
- Limited Lifetime warranty

## Product overview

The HPE OfficeConnect 1950 Switch Series consists of smart Web-managed Gigabit Ethernet switches with 10GbE uplinks, for advanced small business customers needing high-performance connections to servers and network storage. The series is part of the OfficeConnect portfolio of Hewlett Packard Enterprise small business networking products.

The HPE OfficeConnect 1950 Switch Series includes four switches: two standard and two PoE+ models in 24- and 48-port configurations. The switches each have two 10GBASE-T ports supporting copper- based Category 6A-based cabling, and two 10G

## Overview

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, 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 includes a Limited Lifetime Warranty. This warranty provides advance hardware replacement with next business day shipment in most countries, limited 24x7 telephone support available from HPE for the first 90 days, and limited electronic and business hours telephone support is available from HPE for the entire warranty period.

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## Features and benefits

### 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

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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.

## 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

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- **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
- **STP BPDU port protection**  
blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **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

## Overview

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

## 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 automatically configure 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 usage.

## 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

## Overview

### Warranty and support

- **Limited Lifetime Warranty**

This series comes with a Limited Lifetime Warranty providing advance hardware replacement with next business day shipment in most countries, 24x7 phone support available for the first 90 days, and electronic and business hours phone support for the entire warranty period. See <http://www.hpe.com/networking/warrantysummary> for full warranty and support information included with your product purchase.

## Configuration

**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.

### HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch

- 24 RJ-45 auto-negotiating 10/100/1000 ports
- 2 SFP+ fixed 1000/10000 SFP+ ports
- min=0 \ max=2 SFP+ Transceivers
- 2 RJ-45 1/10GBASE-T port
- 1U - Height

JG960A  
See Configuration  
**NOTE:**1, 2

### PDU Cable NA/MX/TW/JP

- C15 PDU Jumper Cord (NA/MX/TW/JP)

JG960A#B2B

### PDU Cable ROW

- C15 PDU Jumper Cord (ROW)

JG960A#B2C

### HPE OfficeConnect 1950 48G 2SFP+ 2XGT Switch

- 48 RJ-45 auto-negotiating 10/100/1000 ports
- 2 SFP+ fixed 1000/10000 SFP+ ports
- min=0 \ max=2 SFP+ Transceivers
- 2 RJ-45 1/10GBASE-T ports
- 1U - Height

JG961A  
See Configuration  
**NOTE:**1, 2

### PDU Cable NA/MX/TW/JP

- C15 PDU Jumper Cord (NA/MX/TW/JP)

JG961A#B2B

### PDU Cable ROW

- C15 PDU Jumper Cord (ROW)

JG961A#B2C

### HPE OfficeConnect 1950 24G 2SFP+ 2XGT PoE+ Switch

- 24 RJ-45 auto-negotiating 10/100/1000 PoE+ ports
- 2 SFP+ fixed 1000/10000 SFP+ ports
- min=0 \ max=2 SFP+ Transceivers
- 2 RJ-45 1/10GBASE-T ports
- 1U - Height

JG962A  
See Configuration  
**NOTE:**1, 2

### PDU Cable NA/MX/TW/JP

- C15 PDU Jumper Cord (NA/MX/TW/JP)

JG962A#B2B

### PDU Cable ROW

- C15 PDU Jumper Cord (ROW)

JG962A#B2C

### HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch

JG963A

Configuration

<ul style="list-style-type: none"><li>48 RJ-45 auto-negotiating 10/100/1000 PoE+ ports</li><li>2 SFP+ fixed 1000/10000 SFP+ ports</li><li>min=0 \ max=2 SFP+ Transceivers</li><li>2 RJ-45 1/10GBASE-T ports</li><li>1U - Height</li></ul>		See Configuration <b>NOTE:</b> 1, 2
PDU Cable NA/MX/TW/JP		JG963A#B2B
<ul style="list-style-type: none"><li>C15 PDU Jumper Cord (NA/MX/TW/JP)</li></ul>		
PDU Cable ROW		JG963A#B2C
<ul style="list-style-type: none"><li>C15 PDU Jumper Cord (ROW)</li></ul>		
Configuration Rules:		
Note 1	The following Transceivers install into this switch:	
	HPE X121 1G SFP LC SX Transceiver	J4858C
	HPE X121 1G SFP LC LX Transceiver	J4859C
	HPE X121 1G SFP RJ45 T Transceiver	J8177C
	HPE X120 1G SFP LC SX Transceiver	JD118B
	HPE X120 1G SFP LC LX Transceiver	JD119B
	HPE X120 1G SFP RJ45 T Transceiver	JD089B
	HPE X130 10G SFP+ LC SR Transceiver	JD092B
	HPE X130 10G SFP+ LC LR Transceiver	JD094B
	HPE X132 10G SFP+ LC SR Transceiver	J9150A
	HPE X132 10G SFP+ LC LR Transceiver	J9151A
	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 FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
Note 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)	

Transceivers

SFP Transceivers

HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C



## Configuration

HPE X121 1G SFP RJ45 T Transceiver	J8177C
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

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
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 FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C

## Cables

### Multi-Mode Cables

HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

## Switch Enclosure Options

### External/Redundant Power Supplies

HPE RPS1600 Redundant Power System	JG136A
<ul style="list-style-type: none"> <li>Height = 1U</li> <li>includes 1 x c13, 1600w and Power Supply port</li> </ul>	See Configuration
	<b>NOTE:</b> 2, 3, 4
HPE RPS1600 1600W AC Power Supply	JG137A
<ul style="list-style-type: none"> <li>Installs into JG136A only</li> </ul>	See Configuration

Configuration

**NOTE:**1, 3

Configuration Rules:

- Note 1

If this power supply is selected, The JG136A - HPE A-RPS1600 Redundant Power System must be on order or onsite.
- Note 2

Localization required.
- Note 3

Each switch will only support 1 JG136A and 1 JG137A Power supply systems.
- Note 4

This power supply only supported on switches JG962A and JG963A.

External/Redundant Power Cables

HPE X290 1000 A JD5 2m RPS Cable	JD187A See Configuration <b>NOTE:</b> 1
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Remarks: These cables are used to connect the External Power System to Switch.

Configuration Rules:

- Note 1

This Cable is only supported on switches JG962A and JG963A when used with the RPS 1600 (JG136A)

## Technical Specifications

### HPE OfficeConnect 1950 24G 2SFP+ 2XGT Switch (JG960A)

<b>I/O ports and slots</b>	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	
<b>Additional ports and slots</b>	1 RJ-45 console port to access limited CLI port	
<b>Physical characteristics</b>	<b>Dimensions</b>	17.17(w) x 6.3(d) x 1.73(h) in (43.6 x 16 x 4.4 cm) (1U height)
	<b>Weight</b>	6.61 lb (3 kg)
<b>Memory and processor</b>	128 MB flash; Packet buffer size: 1.5 MB, 1 GB SDRAM	
<b>Mounting and enclosure</b>	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	
<b>Performance</b>	<b>100 Mb Latency</b>	< 5 $\mu$ s
	<b>1000 Mb Latency</b>	< 5 $\mu$ s
	<b>10 Gbps Latency</b>	< 1.5 $\mu$ s
	<b>Throughput</b>	up to 95.2 Mpps (64-byte packets)
	<b>Routing/Switching capacity</b>	128 Gbps
	<b>Routing table size</b>	32 entries (IPv4), 32 entries (IPv6)
	<b>MAC address table size</b>	16384 entries
	<b>MTBF (years)</b>	87.2
<b>Reliability</b>		
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	10% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
<b>Electrical characteristics</b>	<b>Acoustic</b>	Low-speed fan: 19.0 dB, High-speed fan: 44.5 dB; ISO 7779 Dual speed fan
	<b>Frequency</b>	50/60 Hz
	<b>Voltage</b>	100 - 240 VAC, rated (depending on power supply chosen)
	<b>Maximum power rating</b>	34 W
	<b>Notes</b>	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.
<b>Safety</b>	UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1	
<b>Emissions</b>	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

<b>Management</b>	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.
<b>Notes</b>	Transceivers under accessories are recommended versions. Here is the list of fully supported transceivers. 10G SFP+: JD092B, JD093B, JD094B, JG234A, J9150A, J9151A, J9153A. GE SFP: JD118B, JD119B, JD089B, J4858C, J4859C, J8177C.
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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 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	
	1 RJ-45 console port to access limited CLI port	
Additional ports and slots		
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)
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 90%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/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 (depending on power supply chosen)
	Maximum power rating	54 W

## Technical Specifications

	<b>Notes</b>	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.
<b>Safety</b>	UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1	
<b>Emissions</b>	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	
<b>Management</b>	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.	
<b>Notes</b>	Transceivers under accessories are recommended versions. Here is the list of fully supported transceivers. 10G SFP+: JD092B, JD093B, JD094B, JG234A, J9150A, J9151A, J9153A. GE SFP: JD118B, JD119B, JD089B, J4858C, J4859C, J8177C.	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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 24G 2SFP+ 2XGT PoE+ Switch (JG962A)

<b>I/O ports and slots</b>	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
<b>Additional ports and slots</b>	1 RJ-45 console port to access limited CLI port
<b>Physical characteristics</b>	<b>Dimensions</b> 17.32(w) x 14.17(d) x 1.73(h) in (44 x 36 x 4.4 cm) (1U height) <b>Weight</b> 13.23 lb (6 kg)
<b>Memory and processor</b>	128 MB flash; Packet buffer size: 1.5 MB, 1 GB SDRAM
<b>Mounting and enclosure</b>	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)
<b>Performance</b>	<b>100 Mb Latency</b> < 5 $\mu$ s <b>1000 Mb Latency</b> < 5 $\mu$ s <b>10 Gbps Latency</b> < 1.5 $\mu$ s <b>Throughput</b> up to 95.2 Mpps (64-byte packets) <b>Routing/Switching capacity</b> 128 Gbps <b>Routing table size</b> 32 entries (IPv4), 32 entries (IPv6) <b>MAC address table size</b> 16384 entries
<b>Reliability</b>	<b>MTBF (years)</b> 44.4
<b>Environment</b>	<b>Operating temperature</b> 32°F to 113°F (0°C to 45°C) <b>Operating relative humidity</b> 10% to 90%, noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage</b> 5% to 95%, noncondensing

## Technical Specifications

<b>Electrical characteristics</b>	<b>relative humidity</b>	
	<b>Altitude</b>	up to 16,404 ft (5 km)
	<b>Acoustic</b>	Low-speed fan: 37.3 dB, High-speed fan: 47.1 dB; ISO 7779 Dual speed fan
	<b>Frequency</b>	50/60 Hz
	<b>Voltage</b>	100 - 240 VAC, rated (depending on power supply chosen)
	<b>Maximum power rating</b>	425 W
	<b>PoE power</b>	370 W PoE+
	<b>Notes</b>	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. 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). 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.
<b>Safety</b>	UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1	
<b>Emissions</b>	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	
<b>Management</b>	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.	
<b>Notes</b>	Transceivers under accessories are recommended versions. Here is the list of fully supported transceivers. 10G SFP+: JD092B, JD093B, JD094B, JG234A, J9150A, J9151A, J9153A. GE SFP: JD118B, JD119B, JD089B, J4858C, J4859C, J8177C.	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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)

<b>I/O ports and slots</b>	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	
<b>Additional ports and slots</b>	1 RJ-45 console port to access limited CLI port	
<b>Physical characteristics</b>	<b>Dimensions</b>	17.32(w) x 16.54(d) x 1.73(h) in (44 x 42 x 4.4 cm) (1U height)
	<b>Weight</b>	15.43 lb (7 kg)
<b>Memory and processor</b>	128 MB flash; Packet buffer size: 3 MB, 1 GB SDRAM	
<b>Mounting and enclosure</b>	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included)	
<b>Performance</b>	<b>100 Mb Latency</b>	< 5 $\mu$ s
	<b>1000 Mb Latency</b>	< 5 $\mu$ s

## Technical Specifications

	<b>10 Gbps Latency</b>	< 1.5 $\mu$ s
	<b>Throughput</b>	up to 130.9 Mpps (64-byte packets)
	<b>Routing/Switching capacity</b>	176 Gbps
	<b>Routing table size</b>	32 entries (IPv4), 32 entries (IPv6)
	<b>MAC address table size</b>	16384 entries
<b>Reliability</b>	<b>MTBF (years)</b>	26.8
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	10% to 90%, noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	5% to 95%, noncondensing
	<b>Altitude</b>	up to 16,404 ft (5 km)
	<b>Acoustic</b>	Low-speed fan: 47.3 dB, High-speed fan: 50.0 dB; ISO 7779 Dual speed fan
<b>Electrical characteristics</b>	<b>Frequency</b>	50/60 Hz
	<b>Voltage</b>	100 - 240 VAC, rated (depending on power supply chosen)
	<b>Maximum power rating</b>	470 W
	<b>PoE power</b>	370 W PoE+
	<b>Notes</b>	<p>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.</p> <p>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).</p> <p>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.</p>
<b>Safety</b>		UL 60950; IEC 60950-1; EN 60950-1; GB 4943.1
<b>Emissions</b>		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
<b>Management</b>		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.
<b>Notes</b>		Transceivers under accessories are recommended versions. Here is the list of fully supported transceivers. 10G SFP+: JD092B, JD093B, JD094B, JG234A, J9150A, J9151A, J9153A. GE SFP: JD118B, JD119B, JD089B, J4858C, J4859C, J8177C.
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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

### Standards and protocols **Device management**

(applies to all products in series)

#### **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

#### **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

#### **Network management**

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

#### **QoS/Cos**



## Technical Specifications

IEEE 802.1p (CoS)

### **Security**

IEEE 802.1X Port Based Network Access Control

## Accessories

### HPE OfficeConnect 1950 Switch Series bundles and accessories

#### Transceivers

HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP RJ45 T Transceiver	J8177C
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
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

#### Cables

HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

## Accessory Product Details

**NOTE:** Details are not available for all accessories. The following specifications were available at the time of publication.

<b>HPE X121 1G SFP LC SX Transceiver</b> (J4858C)  A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	<b>Ports</b>	1 LC 1000BASE-SX port; Duplex: full only
	<b>Physical characteristics</b>	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg) Transceiver form factor: SFP
	<b>Environment</b>	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	<b>Cabling</b>	Type: <ul style="list-style-type: none"> <li>62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;</li> </ul> Maximum distance: <ul style="list-style-type: none"> <li>2-220 m (62.5 <math>\mu\text{m}</math> core diameter, 160 MHz*km bandwidth)</li> <li>2-275 m (62.5 <math>\mu\text{m}</math> core diameter, 200 MHz*km bandwidth)</li> <li>2-500 m (50 <math>\mu\text{m}</math> core diameter, 400 MHz*km bandwidth)</li> <li>2-550 m (50 <math>\mu\text{m}</math> core diameter, 500 MHz*km bandwidth)</li> </ul> Cable length: 2-550m Fiber type: Multi Mode
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.
<b>HPE X121 1G SFP LC LX Transceiver</b> (J4859C)  HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.	<b>Ports</b>	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
	<b>Physical characteristics</b>	Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm) Weight: 0.04 lb. (0.02 kg)
	<b>Environment</b>	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 0% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C) Altitude: up to 10,000 ft. (3 km)
	<b>Cabling</b>	Type: <ul style="list-style-type: none"> <li>Either single mode or multimode; 62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content,</li> </ul>

Accessory Product Details

multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;

Maximum distance:

- 2-550 m (multimode 62.5 µm core diameter, 500 MHz\*km bandwidth)
- 2-550 m (multimode 50 µm core diameter, 400 MHz\*km bandwidth)
- 2-550 m (multimode 50 µm core diameter, 500 MHz\*km bandwidth)
- 2-10,000 m (single-mode fiber)

Notes	A mode conditioning patch cord may be needed in some multimode fiber installations. Wavelength: 1310nm Power Consumption: < 500mW Typical
Services	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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 X121 1G SFP RJ45 T Ports Transceiver (J8177C)

HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.

Physical characteristics	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm) Weight: 0.06 lb. (0.03 kg)
Environment	Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Altitude: up to 10,000 ft. (3000 km)
Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ω differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;

Maximum distance:

Accessory Product Details

- 100 m

Notes	<p>Power consumption is nominally 1 watt.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J8177C 1000Base-T Mini-GBIC" on the "HPE Mini-GBICs and SFPs" Manuals Web page.</p> <p>The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports.</p> <p>The J8177C is capable of 100 Mb operation. This is supported on only the HPE E8200zl, E5400zl, and HPE E6200-24G-mGBIC yl Switches using software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation.</p> <p>Important: The earlier J8177B does not support 100 Mb operation. When used in the Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.</p>
Services	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.</p>

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 0.5m 1-  
Pack Fiber Optic Cable  
(AJ833A)

Cable type:	50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m
Maximum distance:	10Gbps Transfer Rate (Ethernet): 300m
Notes	<p>Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 μm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.</p> <ul style="list-style-type: none"><li>• Dimensions: Core diameter: 50 ± 3.0μm Cladding diameter: 125 ± 2.0μm Coating diameter: 245 ± 10μm</li><li>• Optical glass: Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.</li><li>• Optical glass: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.</li><li>• CABLE: The cable is duplex zipcord graded index 50/125μm multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.</li><li>• BULK CABLE &amp; CABLE ASSEMBLY CONFIGURATION:</li><li>• Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.</li><li>• Jacket Color: Aqua for OM3 multimode per TIA 598</li><li>• Boot Color: White</li></ul>

Accessory Product Details

- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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.

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 1.0m 1-Pack  
Fiber Optic Cable  
(AJ834A)

**Cable type:**  
50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

**Maximum distance:**  
10Gbps Transfer Rate (Ethernet): 300m  
  
**Notes**  
Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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

Accessory Product Details

Enterprise sales office.

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 2.0m 1-  
Pack Fiber Optic Cable  
(AJ835A)

Notes

**Cable type:**  
50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

**Maximum distance:**  
10Gbps Transfer Rate (Ethernet): 300m  
  
Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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.

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 5.0m 1-  
Pack Fiber Optic Cable  
(AJ836A)

Notes

**Cable type:**  
50/125 μm core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

**Maximum distance:**  
10Gbps Transfer Rate (Ethernet): 300m  
  
Cable Specs: This specification defines the detail requirements for a tight

Accessory Product Details

buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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.

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable  
(AJ837A)

**Cable type:**  
50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

**Maximum distance:**  
10Gbps Transfer Rate (Ethernet): 300m  
  
**Notes**  
Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600



Accessory Product Details

- meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
  - BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
  - Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
  - Jacket Color: Aqua for OM3 multimode per TIA 598
  - Boot Color: White
  - Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
  - Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
  - Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

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.

HP LC to LC Multi-mode Cabling  
OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable  
(AJ838A)

**Cable type:**  
50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

**Maximum distance:**  
10Gbps Transfer Rate (Ethernet): 300m  
  
**Notes**  
Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.
- Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003

Accessory Product Details

	<p>dB/M added for lengths &gt; 30 meters.</p> <ul style="list-style-type: none"><li>Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.</li><li>Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg</li></ul>
Services	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> 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.</p>
<div>HP LC to LC Multi-mode Cabling</div> <div>OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable</div> <div>(AJ839A)</div>	<div><b>Cable type:</b></div> <div>50/125 μm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;</div> <div><b>Maximum distance:</b></div> <div>10Gbps Transfer Rate (Ethernet): 300m</div> <div><b>Notes</b></div> <div>Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.</div> <div><ul style="list-style-type: none"><li>Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um</li><li>Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.</li><li>Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.</li><li>CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.</li><li>BULK CABLE &amp; CABLE ASSEMBLY CONFIGURATION:</li><li>Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.</li><li>Jacket Color: Aqua for OM3 multimode per TIA 598</li><li>Boot Color: White</li><li>Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths &gt; 30 meters.</li><li>Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.</li><li>Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg</li></ul></div>

Services

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## Accessory Product Details

### HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core Diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### 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.

### HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### 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.

## Accessory Product Details

### HP Premier Flex LC/LC Notes Multi-mode OM4 2 fiber 5m Cable (QK734A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### 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.

### HP Premier Flex LC/LC Notes Multi-mode OM4 2 fiber 15m Cable (QK735A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### Services

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## Accessory Product Details

### HP Premier Flex LC/LC Notes Multi-mode OM4 2 fiber 30m Cable (QK736A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### 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.

### HP Premier Flex LC/LC Notes Multi-mode OM4 2 fiber 50m Cable (QK737A)

Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.

- Core diameter: 50um  $\pm$ 3um, Cladding diameter: 125um  $\pm$ 2um; Coating diameter: 245  $\pm$  10um
- Bandwidth: 3000 MHz-km @ 850nm (Laser)
- Jacket Color: Blue
- Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
- Boot Color: White
- Outer Jacket Print: HPE PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
- Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m
- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

#### Services

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Accessory Product Details

## Summary of Changes

Date	Version History	Action	Description of Change:
06-May-2016	From Version 4 to 5	Changed	Document name changed to HPE OfficeConnect 1950 Switch Series. SKU descriptions, Features and Benefits and Overview updated.
01-Dec-2015	From Version 3 to 4	Changed	Overview and Technical Specifications updated
28-Sep-2015	From Version 2 to 3	Added	Bundles section added on Accessories. SKUs added: <ul style="list-style-type: none"> <li>• JH376A</li> <li>• JH377A</li> </ul>
		Changed	Minor changes on the Overview section
29-Jun-2015	From Version 1 to 2	Changed	Changes made on the Product overview and Features and benefits sections



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