HPE OfficeConnect 1950 Switch Series

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

Overview

Product overview

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 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.

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
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Overview

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

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

Overview

- 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
- 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.

Overview

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

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
  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

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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
No Power Cord • No Localized Power Cord Selected	JG960A#AC3
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
No Power Cord • No Localized Power Cord Selected	JG961A#AC3
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

Configuration

No Power Cord • No Localized Power Cord Selected	JG962A#AC3
HPE OfficeConnect 1950 48G 2SFP+ 2XGT PoE+ Switch • 48 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	JG963A See Configuration **NOTE:**1, 2
PDU Cable NA/MX/TW/JP • C15 PDU Jumper Cord (NA/MX/TW/JP)	JG963A#B2B
PDU Cable ROW • C15 PDU Jumper Cord (ROW)	JG963A#B2C
No Power Cord • No Localized Power Cord Selected	JG963A#AC3
HPE 1950 12XGT 4SFP+ Switch • 12 RJ-45 1/10GBASE-T ports • 4 SFP+ fixed 1000/10000 SFP+ ports • min=0 \ max=4 SFP+ Transceivers • 1U - Height	JH295A See Configuration **NOTE:**1, 2
PDU Cable NA/MX/TW/JP • C15 PDU Jumper Cord (NA/MX/TW/JP)	JH295A#B2B
PDU Cable ROW • C15 PDU Jumper Cord (ROW)	JH295A#B2C
No Power Cord • No Localized Power Cord Selected	JH295A#AC3

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

Configuration

	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
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

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

Configuration

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

Switch Enclosure Options

External/Redundant Power Supplies

HPE RPS1600 Redundant Power System • Height = 1U • includes 1 x c13, 1600w and Power Supply port	JG136A See Configuration **NOTE:**2, 3, 4
HPE RPS1600 1600W AC Power Supply • Installs into JG136A only	JG137A See Configuration **NOTE:**1, 3
HPE RPS 800 Redundant Power Supply • Installs into JH295A only	JD183A See Configuration **NOTE: 2, 5**

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.
Note 5	This power supply is only supported on switch JH295A

External/Redundant Power Cables

HPE X290 1000 A JD5 2m RPS Cable	JD187A See Configuration **NOTE:**1
HPE X290 500/800 1m RPS Cable	JD190A

Configuration

See Configuration **NOTE:**2

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)

Note 2 This Cable is only supported on switch JH295A when used with the RPS 800 (JD183A)

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 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	< 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
	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	ISO 7779
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.	

Technical Specifications

Notes	Transceivers under accessories are recommended versions. Here is the list of fully supported transceivers. 10G SFP+: JD092B, JD093B, JD094B, JG234A, J9150A, J9151A, J9152A, J9153A. GE SFP: JD118B, JD119B, JD089B, J4858C, J4859C, J8177C
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 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
	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: 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

Technical Specifications

	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.	
Notes	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.	
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 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
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing

Technical Specifications

	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.	
Notes	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.	
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 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

Technical Specifications

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
	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: 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. 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.
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.	
Notes	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.	
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

Technical Specifications

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
	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: 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. 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 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	

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.
Notes	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.
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 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
IEEE 802.1p (CoS)

Security
IEEE 802.1X Port Based Network Access Control

HPE OfficeConnect 1950 Switch Series 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	
HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
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

Accessory Product Details

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

HPE X121 1G SFP LC SX Transceiver (J4858C) A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	Ports	1 LC 1000BASE-SX port; Duplex: full only
	Physical characteristics	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
	Environment	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)
	Electrical characteristics	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	Cabling	Type: • 62.5/125 µm or 50/125 µm (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; Maximum distance: • 2-220 m (62.5 µm core diameter, 160 MHz*km bandwidth • 2-275 m (62.5 µm core diameter, 200 MHz*km bandwidth • 2-500 m (50 µm core diameter, 400 MHz*km bandwidth) • 2-550 m (50 µm core diameter, 500 MHz*km bandwidth) Cable length: 2-550m Fiber type: Multi Mode
	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

HPE X121 1G SFP LC LX Transceiver (J4859C) HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.	Ports	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only
	Physical characteristics	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)
	Environment	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)
	Cabling	Type: • Either single mode or multimode; 62.5/125 µm or 50/125 µm (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; 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 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

HPE X121 1G SFP RJ45 T Transceiver (J8177C) HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.	Ports	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only
	Physical characteristics	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 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T; Maximum distance: • 100 m
	Notes	Power consumption is nominally 1 watt. 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. The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports. 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. 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.
	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

HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable (AJ833A)	Cabling	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: Bandwidth: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and 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.

Accessory Product Details

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

Accessory Product Details

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

Accessory Product Details

HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable (AJ836A)	Cabling	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: This specification defines the detail requirements for a 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.

Accessory Product Details

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

Accessory Product Details

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

Accessory Product Details

HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable (AJ839A)	Cabling	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 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.

Accessory Product Details

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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.

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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.

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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.

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A) Notes	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 ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 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.

Summary of Changes

Date	Version History	Action	Description of Change:
05-Sep-2016	From Version 6 to 7	Added	Model added: JH295A
01-Aug-2016	From Version 5 to 6	Changed	Adding #AC3 Option on Configuration section Technical Specifications updated
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: JH376A, JH377A
		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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