Overview

Models

HP 3800-24G-PoE+-2SFP+ Switch	J9573A
HP 3800-48G-PoE+-4SFP+ Switch	J9574A
HP 3800-24G-2SFP+ Switch	J9575A
HP 3800-48G-4SFP+ Switch	J9576A
HP 3800-24G-2XG Switch	J9585A
HP 3800-48G-4XG Switch	J9586A
HP 3800-24G-PoE+-2XG Switch	J9587A
HP 3800-48G-PoE+-4XG Switch	J9588A
HP 3800-24SFP-2SFP+ Switch	J9584A

Key features

- Fully-managed layer 3 stackable switch series
- Low-latency, highly resilient architecture
- SFP+, 10GBase-T, PoE+, modular stacking
- HP FlexChassis-Mesh - stack up to 10 switches
- Industry leading lifetime warranty

Product overview

The HP 3800 Switch Series is a family of fully managed Gigabit Ethernet switches. There are a total of nine switch models—a 24-port switch, a 48-port switch, a 24-port PoE+ switch, a 48-port PoE+ switch with either SFP+ or 10GBASE-T uplinks, and a 24-port SFP switch with 2 SFP+ uplinks. HP 3800 Series Switches utilize the latest HP ProVision ASIC technology and combine the latest advances in hardware engineering to deliver one of the most resilient and energy-efficient switches in the industry. The 3800 series implements meshed stacking technology to deliver chassis-like resiliency in a flexible stackable form factor.

Features and benefits

Quality of Service (QoS)

- **Layer 4 prioritization**: enables prioritization based on TCP/UDP port numbers
- **Class of Service** (CoS): sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Bandwidth shaping**:
  - Port-based rate limiting: provides per-port ingress-/egress-enforced maximum bandwidth
  - Classifier-based rate limiting: uses an access control list (ACL) to enforce maximum bandwidth for ingress traffic on each port
  - Guaranteed minimum: provides per-port, per-queue egress-based guaranteed minimum bandwidth
- **Advanced classifier-based QoS**: classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a per-port or per-VLAN basis
- **Remote Intelligent Mirroring**: mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote HP 8200 zl, 6600, 6200 yl, 5400 zl, 3800, or 3500 switch anywhere on the network
- **RMON, XRMON, and sFlow v5**: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Traffic prioritization**: allows real-time traffic classification into eight priority levels mapped to eight queues

Overview

Management

- **Friendly port names**: allow assignment of descriptive names to ports
- **IEEE 802.1AB Link Layer Discovery Protocol** (LLDP): automated device discovery protocol provides easy mapping of network management applications
- **Command authorization**: leverages RADIUS to link a custom list of CLI commands to an individual network administrator's login; also provides an audit trail
- **Uni-Directional Link Detection** (UDLD): monitors cable between two switches and shuts down the ports on both ends if the cable is broken, turning the bidirectional link into a unidirectional one; this prevents network problems such as loops
- **Multiple configuration files**: can be stored to the flash image
- **Dual flash images**: provide independent primary and secondary operating system files for backup while upgrading
- **Out-of-Band Ethernet management port**: for management over a separate physical management network; keeps management traffic segmented from network data traffic

Connectivity

- **Jumbo frames**: on Gigabit Ethernet and 10-Gigabit ports, they allow high-performance remote backup and disaster-recovery services
- **IPv6**:
  - IPv6 host: enables switches to be managed and deployed at the IPv6 network's edge
  - Dual stack (IPv4 and IPv6): transitions from IPv4 to IPv6, supporting connectivity for both protocols
  - MLD snooping: forwards IPv6 multicast traffic to the appropriate interface
  - IPv6 ACL/QoS: supports ACL and QoS for IPv6 network traffic, preventing traffic flooding
  - IPv6 routing: supports static and OSPFv3 routing protocols
- **IEEE 802.3at Power Over Ethernet Plus** (PoE+): provides up to 30 W per port to IEEE 802.3 for PoE-/PoE+-powered devices such as video IP phones, IEEE 802.11n wireless access points, and advanced pan/zoom/tilt security cameras
- **Pre-standard PoE support**: detects and provides power to pre-standard PoE devices; see list of supported devices in the product FAQs at: www.hp.com/networking
- **Choice of uplinks**:
  - SFP+ uplink models: for fiber optic (up to 70km) or direct attach cable (DAC) connectivity
  - 10GBase-T uplink models: for 10 GbE speeds using standard RJ-45 connectors and standard twisted pair cabling up to 100m
- **Auto-MDIX**: automatically adjusts for straight-through or crossover cables on all RJ-45 ports

Performance

- **Selectable queue configurations**: allow you to increase performance by selecting the number of queues and associated memory buffering that best meet the requirements of your network applications
- **Energy-efficient design**:
  - High-efficiency power supplies: 80 PLUS GOLD certified power supplies for increased power savings
  - Energy Efficient Ethernet support: IEEE 802.3az support for reduced power consumption
- **Meshed stacking technology**:
  - High-performance stacking: up to 336 Gbps of stacking throughput; each 4-port stacking module can support up to 42 Gbps in each direction per stacking port
  - Ring, chain, and mesh topologies: support up to a 10-member ring or chain and 5-member fully meshed stacks; meshed topologies offer increased resiliency vs. a standard ring
  - Virtualized switching: when stacked, switches appear as a single chassis for simplified management
- **HP ProVision ASIC architecture**: designed with the latest HP ProVision ASIC, with very low latency, increased packet buffering, and adaptive power consumption

Resiliency and high availability

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- **IEEE 802.3ad Link Aggregation Protocol** (LACP) **and HP port trunking**: support up to 24 trunks, each with up to 8 links (ports) per trunk
- **IEEE 802.1s Multiple Spanning Tree**: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **Virtual Router Redundancy Protocol** (VRRP): allows groups of two routers to dynamically back each other up to create highly available routed environments
- **Dual hot-swappable power supplies**:
  - Increased resiliency: second power supply can allow for complete switch power redundancy in case of power line or supply failure
  - Increased PoE+ power: second power supply can increase total available PoE+ power

Layer 2 switching

- **HP's switch meshing**: dynamically load balances across multiple active redundant links to increase available aggregate bandwidth
- **GARP VLAN Registration Protocol**: allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1ad QinQ**: increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- **VLAN support and tagging**: supports the IEEE 802.1Q standard and 2,048 VLANs simultaneously
- **IEEE 802.1v protocol VLANs**: isolate select non-IPv4 protocols automatically into their own VLANs

Layer 3 services

- **Loopback interface address**: defines an address in Routing Information Protocol (RIP) and OSPF that can always be reachable, improving diagnostic capability
- **Route maps**: provide more control during route redistribution; allow filtering and altering of route metrics
- **User Datagram Protocol** (UDP) **helper function**: allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP

Layer 3 routing

- **Routing Information Protocol** (RIP): provides RIPv1 and RIPv2 routing
- **Static IP routing**: provides manually configured routing for both IPv4 and IPv6 networks
- **OSPF**: provides OSPFv2 for IPv4 routing and OSPFv3 for IPv6 routing

Security

- **Source-port filtering**: allows only specified ports to communicate with each other
- **RADIUS/TACACS+**: eases switch management security administration by using a password authentication server
- **Secure Shell**: encrypts all transmitted data for secure remote CLI access over IP networks
- **Secure Sockets Layer** (SSL): encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Port security**: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**: prevents particular configured MAC addresses from connecting to the network
- **Detection of malicious attacks**: monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- **Secure FTP**: allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Switch management logon security**: can require either RADIUS or TACACS+ authentication for secure switch CLI logon

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- **Secure management access**: securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **ICMP throttling**: defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
- **Virus throttling**: detects traffic patterns typical of WORM-type viruses and either throttles or entirely prevents the virus from spreading across the routed VLANs or bridged interfaces without requiring external appliances
- **Identity-driven ACL**: enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **STP BPDU port protection**: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **Dynamic IP lockdown**: works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
- **DHCP protection**: blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **STP Root Guard**: protects the root bridge from malicious attacks or configuration mistakes
- **Management Interface Wizard**: helps ensure that management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB are secured at the desired level
- **Security banner**: displays a customized security policy when users log in to the switch
- **Switch CPU protection**: provides automatic protection against malicious network traffic trying to shut down the switch
- **USB Secure Autorun**: deploys, diagnoses, and updates switch using a USB flash drive; works with a secure credential to prevent tampering (requires HP PMC+)
- **Access control lists** (ACLs): provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis
- **Multiple Authentication Methods**:
  - IEEE 802.1X: authentication of multiple IEEE 802.1X users per port; prevents user "piggybacking" on another user's authentication
  - Web-based authentication: authenticates from Web browser for clients that do not support IEEE 802.1X supplicant
  - MAC-based authentication: client is authenticated with the RADIUS server based on client's MAC address
  - Concurrent authentication modes: each switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Access control lists** (ACLs): provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis

Convergence

- **IP multicast snooping** (data-driven IGMP): automatically prevents flooding of IP multicast traffic
- **LLDP-MED** (Media Endpoint Discovery): is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **RADIUS VLAN for voice**: uses a standard RADIUS attribute and LLDP-MED to automatically configure a VLAN for IP phones
- **PoE allocations**: support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings
- **IP multicast routing**: includes PIM Sparse and Dense modes to route IP multicast traffic

Warranty and support

- **Lifetime warranty**: for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)†
- **Electronic and telephone support**: limited electronic and telephone support is available from HP; to reach our support centers, refer to www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases**: to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

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† HP warranty includes repair or replacement of hardware for as long as you own the product, with next business day advance replacement (available in most countries). The disk drive included with HP AllianceOne Advanced Services and Services zl Modules, HP Threat Management Services zl Module, HP AllianceOne Extended zl Module with Riverbed Steelhead, HP MSM765zl Mobility Controller and HP Survivable Branch Communication zl Module powered by Microsoft Lync has a five-year hardware warranty. For details, refer to the Software license and hardware warranty statements at www.hp.com/networking/warranty.

Technical Specifications

HP 3800-24G-PoE+-2SFP+ Switch (J9573A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X312 1000W 100-240VAC to 54VDC Power Supply (J9580A)	
Ports	24 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	2 fixed 1000/10000 SFP+ ports	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9580A (HP X312 1000W 100-240VAC to 54VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	15.9 lb. (7.21 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 18 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	65.4 million pps (64-byte packets)
	Switching capacity	88 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); max temperature is 45°C when transceivers are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 49 dB, Pressure: 33.7 dB
Electrical characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-120/200-240 VAC
	Current	9.4/7.8 A

	Idle power	70 W
	Maximum power rating	127 W
	PoE power	720 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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 a External Power Supply (EPS). With a single power supply @ 120 V input, a maximum of 572 W of PoE power is available.
Safety	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E)	

1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E)
1-year, 24x7 software phone support, software updates (HT017E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E)

Refer to the HP website at: www.hp.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 HP sales office.

HP 3800-48G-PoE+-4SFP+ Switch (J9574A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X312 1000W 100-240VAC to 54VDC Power Supply (J9580A)	
Ports	48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	4 fixed 1000/10000 SFP+ ports	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9580A (HP X312 1000W 100-240VAC to 54VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	16.84 lb. (7.64 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 36 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)

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	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	130.9 million pps (64-byte packets)
	Switching capacity	176 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); max temperature is 45°C when transceivers are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 57 dB, Pressure: 41.2 dB
Electrical characteristics	**Maximum heat dissipation**	635 BTU/hr (669.93 kJ/hr)
	Voltage	100-120/200-240 VAC
	Current	9.4/7.8 A
	Idle power	97 W
	Maximum power rating	186 W
	PoE power	1080 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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 a External Power Supply (EPS). With a single power supply @ 120 V input, a maximum of 514 W of PoE power is available. With a single power supply @ 240 V, a maximum of 814 W of PoE power is available.
Safety	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V

	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E) 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E) 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E) Refer to the HP website at: www.hp.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 HP sales office.	

HP 3800-24G-2SFP+ Switch (J9575A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X311 400W 100-240VAC to 12VDC Power Supply (J9581A)

Technical Specifications

Ports	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	2 fixed 1000/10000 SFP+ ports	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9581A (HP X311 400W 100-240VAC to 12VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	15.25 lb. (6.92 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 18 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	65.4 million pps (64-byte packets)
	Switching capacity	88 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); max temperature is 45°C when transceivers are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 36 dB, Pressure: 26.4 dB
Electrical characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	6/3 A
	Idle power	66 W
	Maximum power rating	127 W
	Frequency	50/60 Hz

	Notes	Idle power is the actual power consumption of the device with no ports connected. 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	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange	

(HT019E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E)

Refer to the HP website at: www.hp.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 HP sales office.

Standards and protocols (applies to all products in series)

Device management
RFC 1591 DNS (client)
HTML and telnet management

General protocols
IEEE 802.1ad Q-in-Q
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 868 Time Protocol
RFC 951 BOOTP
RFC 1058 RIPv1
RFC 1350 TFTP Protocol (revision 2)
RFC 1519 CIDR
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 2453 RIPv2
RFC 2548 (MS-RAS-Vendor only)
RFC 3046 DHCP Relay Agent Information Option
RFC 3576 Ext to RADIUS (CoA only)
RFC 3768 VRRP
RFC 4675 RADIUS VLAN & Priority
UDLD (Uni-directional Link Detection)
RFC 4293 MIB for IP
RFC 4294 IPv6 Node Requirements
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
RFC 5340 OSPFv3 for IPv6
RFC 5453 Reserved IPv6 Interface Identifiers
RFC 5722 Handling of Overlapping IPv6 Fragments

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 1850 OSPFv2 MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2787 VRRP MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)

IP multicast
RFC 3376 IGMPv3 (host joins only)
RFC 3973 Draft 2 PIM Dense Mode
RFC 4601 Draft 10 PIM Sparse Mode

IPv6
RFC 1981 IPv6 Path MTU Discovery
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6 Specification
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2925 Remote Operations MIB (Ping only)
RFC 3019 MLDv1 MIB
RFC 3315 DHCPv6 (client only)
RFC 3484 Default Address Selection for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4291 IP Version 6 Addressing Architecture
XRMON

OSPF
RFC 2328 OSPFv2
RFC 3101 OSPF NSSA
RFC 5340 OSPFv3 for IPv6

QoS/CoS
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2865 RADIUS (client only)
RFC 2866 RADIUS Accounting
Access Control Lists (ACLs)
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell
Web Authentication

HP 3800-48G-4SFP+ Switch (J9576A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X311 400W 100-240VAC to 12VDC Power Supply (J9581A)	
Ports	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	4 fixed 1000/10000 SFP+ ports	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9581A (HP X311 400W 100-240VAC to 12VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	16 lb. (7.26 kg) switch chassis with 1 power supply and fan tray installed

Technical Specifications

Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 36 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	130.9 million pps (64-byte packets)
	Switching capacity	176 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); max temperature is 45°C when transceivers are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 36 dB, Pressure: 25.4 dB
Electrical characteristics	**Maximum heat dissipation**	635 BTU/hr (669.93 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	6/3 A
	Idle power	70 W
	Maximum power rating	186 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V

	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E) 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E) 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E) Refer to the HP website at: www.hp.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 HP sales office.	

HP 3800-24G-2XG Switch (J9585A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X311 400W 100-240VAC to 12VDC Power Supply (J9581A)

Technical Specifications

Ports	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	2 RJ-45 10-GbE ports IEEE 802.3an-2006 Type 10GBASE-T; Duplex: full only	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9581A (HP X311 400W 100-240VAC to 12VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	15.8 lb. (7.17 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 18 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	65.4 million pps (64-byte packets)
	Switching capacity	88 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 39 dB, Pressure: 25.5 dB
Electrical characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	6/3 A
	Idle power	70 W
	Maximum power rating	127 W
	Frequency	50/60 Hz

	Notes	Idle power is the actual power consumption of the device with no ports connected. 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	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange	

(HT019E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E)

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HP 3800-48G-4XG Switch (J9586A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X311 400W 100-240VAC to 12VDC Power Supply (J9581A)	
Ports	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	4 RJ-45 10-GbE ports IEEE 802.3an-2006 Type 10GBASE-T; Duplex: full only	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9581A (HP X311 400W 100-240VAC to 12VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	16.35 lb. (7.42 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM GB; packet buffer size: 36 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	130.9 million pps (64-byte packets)
	Switching capacity	176 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); Max temperature is 45C when SFP+ Tranceivers are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing

	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 34 dB, Pressure: 24.5 dB
Electrical characteristics	**Maximum heat dissipation**	635 BTU/hr (669.93 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	6/3 A
	Idle power	74 W
	Maximum power rating	186 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E)	

5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E)
5-year, 24x7 SW phone support, software updates (HT047E)
3 Yr 6 hr Call-to-Repair Onsite (HT025E)
4 Yr 6 hr Call-to-Repair Onsite (HT035E)
5 Yr 6 hr Call-to-Repair Onsite (HT045E)
1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E)
1-year, 24x7 software phone support, software updates (HT017E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E)
1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E)

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Standards and protocols (applies to all products in series)

Device management
RFC 1591 DNS (client)
HTML and telnet management

General protocols
IEEE 802.1ad Q-in-Q
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 4293 MIB for IP
RFC 4294 IPv6 Node Requirements
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
RFC 5340 OSPFv3 for IPv6
RFC 5453 Reserved IPv6 Interface Identifiers
RFC 5722 Handling of Overlapping IPv6 Fragments

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 1850 OSPFv2 MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB

RFC 854 TELNET
RFC 868 Time Protocol
RFC 951 BOOTP
RFC 1058 RIPv1
RFC 1350 TFTP Protocol (revision 2)
RFC 1519 CIDR
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 2453 RIPv2
RFC 2548 (MS-RAS-Vendor only)
RFC 3046 DHCP Relay Agent Information Option
RFC 3576 Ext to RADIUS (CoA only)
RFC 3768 VRRP
RFC 4675 RADIUS VLAN & Priority
UDLD (Uni-directional Link Detection)

IP multicast
RFC 3376 IGMPv3 (host joins only)
RFC 3973 Draft 2 PIM Dense Mode
RFC 4601 Draft 10 PIM Sparse Mode

IPv6
RFC 1981 IPv6 Path MTU Discovery
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6 Specification
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2925 Remote Operations MIB (Ping only)
RFC 3019 MLDv1 MIB
RFC 3315 DHCPv6 (client only)
RFC 3484 Default Address Selection for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4291 IP Version 6 Addressing Architecture
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2787 VRRP MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

OSPF
RFC 2328 OSPFv2
RFC 3101 OSPF NSSA
RFC 5340 OSPFv3 for IPv6

QoS/CoS
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2865 RADIUS (client only)
RFC 2866 RADIUS Accounting
Access Control Lists (ACLs)
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell
Web Authentication

HP 3800-24G-PoE+-2XG Switch (J9587A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X312 1000W 100-240VAC to 54VDC Power Supply (J9580A)
Ports	24 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-

Technical Specifications

	TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	2 RJ-45 10-GbE ports IEEE 802.3an-2006 Type 10GBASE-T; Duplex: full only	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9580A (HP X312 1000W 100-240VAC to 54VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	16.45 lb. (7.46 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 18 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	65.4 million pps (64-byte packets)
	Switching capacity	88 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 48 dB, Pressure: 32.6 dB
Electrical characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-120/200-240 VAC
	Current	9.4/7.8 A
	Idle power	71 W
	Maximum power rating	127 W
	PoE power	720 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports

		connected. 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 a External Power Supply (EPS). With a single power supply @ 120 V input, a maximum of 572 W of PoE power is available.
Safety	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange	

(HT009E)
1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E)
3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E)
3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E)
4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E)
4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E)
5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E)
5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E)

Refer to the HP website at: www.hp.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 HP sales office.

HP 3800-48G-PoE+-4XG Switch (J9588A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X312 1000W 100-240VAC to 54VDC Power Supply (J9580A)	
Ports	48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	4 RJ-45 10-GbE ports IEEE 802.3an-2006 Type 10GBASE-T; Duplex: full only	
	1 RJ-45 serial console port	
	1 RJ-45 out-of-band management port	
	1 Stacking module slot	
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9580A (HP X312 1000W 100-240VAC to 54VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	17.25 lb. (7.82 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 36 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	130.9 million pps (64-byte packets)
	Switching capacity	176 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 131°F (0°C to 55°C); max temperature is 45C when SFP+ transceivers

		are installed
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 57 dB, Pressure: 41.5 dB
Electrical characteristics	**Maximum heat dissipation**	635 BTU/hr (669.93 kJ/hr)
	Voltage	100-120/200-240 VAC
	Current	9.4/7.8 A
	Idle power	100 W
	Maximum power rating	186 W
	PoE power	1080 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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 a External Power Supply (EPS). With a single power supply @ 120 V input, a maximum of 514 W of PoE power is available. With a single power supply @ 240 V input, a maximum of 814 W of PoE power is available.
Safety	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3

Technical Specifications

Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E) 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E) 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E) Refer to the HP website at: www.hp.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 HP sales office.

HP 3800-24SFP-2SFP+ Switch (J9584A)

Included accessories	1 HP 3800 Switch Fan Tray (J9582A) 1 HP X311 400W 100-240VAC to 12VDC Power Supply (J9581A)
Ports	24 SFP 100/1000 Mbps ports (IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 100BASE-TX: half or full; 1000BASE-T: full only 2 fixed 1000/10000 SFP+ ports 1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 Stacking module slot

Technical Specifications

Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9581A (HP X311 400W 100-240VAC to 12VDC Power Supply)	
Fan tray	includes: 1 x J9582A 1 fan tray slot	
Physical characteristics	**Dimensions**	18.4(d) x 17.43(w) x 1.7(h) in. (46.74 x 44.27 x 4.32 cm) (1U height)
	Weight	16 lb. (7.26 kg) switch chassis with 1 power supply and fan tray installed
Memory and processor	**Processor**	HP ProVision ASIC/ARM @ 350 MHz; Freescale PowerPC @ 1200 MHz, 4 GB flash, 2 GB SDRAM; packet buffer size: 18 MB dynamic
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.8 µs (LIFO 64-byte packets)
	10 Gbps Latency	< 1.9 µs (LIFO 64-byte packets)
	Throughput	65.4 million pps (64-byte packets)
	Switching capacity	88 Gbps
	Routing table size	10000 entries
	MAC address table size	65500 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft. (3 km)
	Acoustic	Power: 36 dB, Pressure: 25 dB
Electrical characteristics	**Maximum heat dissipation**	434 BTU/hr (457.87 kJ/hr)
	Voltage	100-127/200-240 VAC
	Current	6/3 A
	Idle power	55 W
	Maximum power rating	127 W
	Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. 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	EN 60950/IEC 60950; UL 60950; CAN/CSA 22.2 No. 60950; EN 60825	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	

Technical Specifications

Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	Surge	IEC 61000-4-5; 1 kV/2 kV AC
	Conducted	IEC 61000-4-6; 3 V
	Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	Voltage dips and interruptions	IEC 61000-4-11; >95% reductions, 0.5 period; 30% reduction, 25 periods
	Harmonics	EN 61000-3-2, IEC 61000-3-2
	Flicker	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu	
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (HT021E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HT023E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (HT028E) 3-year, 24x7 SW phone support, software updates (HT027E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HT031E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HT033E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT038E) 4-year, 24x7 SW phone support, software updates (HT037E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HT041E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HT043E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HT048E) 5-year, 24x7 SW phone support, software updates (HT047E) 3 Yr 6 hr Call-to-Repair Onsite (HT025E) 4 Yr 6 hr Call-to-Repair Onsite (HT035E) 5 Yr 6 hr Call-to-Repair Onsite (HT045E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HT011E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HT013E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HT015E) 1-year, 24x7 software phone support, software updates (HT017E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HT018E) 1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT009E) 1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HT010E) 3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT019E) 3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT020E) 4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT029E) 4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT030E) 5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HT039E) 5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HT040E) Refer to the HP website at: www.hp.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 HP sales office.

Standards and protocols (applies to all products in series)

Device management
RFC 1591 DNS (client)
HTML and telnet management

General protocols
IEEE 802.1ad Q-in-Q
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1v VLAN classification by Protocol and Port
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 868 Time Protocol
RFC 951 BOOTP
RFC 1058 RIPv1
RFC 1350 TFTP Protocol (revision 2)
RFC 1519 CIDR
RFC 1542 BOOTP Extensions
RFC 2030 Simple Network Time Protocol (SNTP) v4
RFC 2131 DHCP
RFC 2453 RIPv2
RFC 2548 (MS-RAS-Vendor only)
RFC 3046 DHCP Relay Agent Information Option
RFC 3576 Ext to RADIUS (CoA only)
RFC 3768 VRRP
RFC 4675 RADIUS VLAN & Priority
UDLD (Uni-directional Link Detection)

IP multicast
RFC 3376 IGMPv3 (host joins only)
RFC 3973 Draft 2 PIM Dense Mode
RFC 4601 Draft 10 PIM Sparse Mode

IPv6
RFC 1981 IPv6 Path MTU Discovery
RFC 2375 IPv6 Multicast Address Assignments
RFC 4293 MIB for IP
RFC 4294 IPv6 Node Requirements
RFC 4419 Key Exchange for SSH
RFC 4443 ICMPv6
RFC 4541 IGMP & MLD Snooping Switch
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
RFC 5340 OSPFv3 for IPv6
RFC 5453 Reserved IPv6 Interface Identifiers
RFC 5722 Handling of Overlapping IPv6 Fragments

MIBs
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 1850 OSPFv2 MIB
RFC 2021 RMONv2 MIB
RFC 2096 IP Forwarding Table MIB
RFC 2613 SMON MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2668 802.3 MAU MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2737 Entity MIB (Version 2)
RFC 2787 VRRP MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB

Network management
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 3176 sFlow
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

OSPF
RFC 2328 OSPFv2
RFC 3101 OSPF NSSA
RFC 5340 OSPFv3 for IPv6

QoS/CoS
RFC 2474 DiffServ Precedence, including 8

RFC 2460 IPv6 Specification
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2925 Remote Operations MIB (Ping only)
RFC 3019 MLDv1 MIB
RFC 3315 DHCPv6 (client only)
RFC 3484 Default Address Selection for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4291 IP Version 6 Addressing Architecture

queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
RFC 2865 RADIUS (client only)
RFC 2866 RADIUS Accounting
Access Control Lists (ACLs)
MAC Authentication
MAC Lockdown
MAC Lockout
Port Security
Secure Sockets Layer (SSL)
SSHv1/SSHv2 Secure Shell
Web Authentication

Accessories

HP 3800 Switch Series accessories	**Modules**	
	HP 3800 4-port Stacking Module	J9577A
	Cables	
	HP 3800 0.5m Stacking Cable	J9578A
	HP 3800 1m Stacking Cable	J9665A
	HP 3800 3m Stacking Cable	J9579A
	Fan Tray	
	HP 3800 Switch Fan Tray	J9582A
	Mounting Kit	
	HP X410 1U Universal 4-post Rack Mounting Kit	J9583A
	HP 3800-24G-PoE+-2SFP+ Switch (J9573A)	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X132 10G SFP+ LC ER Transceiver	J9153A
	HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
	HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
	HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
	HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
	HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
	HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
	HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
	NEW HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
	HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
	HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
	HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
	HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
	HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
	HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
	HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
	HP X312 1000W 100-240VAC to 54VDC Power Supply	J9580A
	HP 3800-48G-PoE+-4SFP+ Switch (J9574A)	
	HP X121 1G SFP LC SX Transceiver	J4858C

HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X312 1000W 100-240VAC to 54VDC Power Supply	J9580A
HP 3800-24G-2SFP+ Switch (J9575A)	
HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A

HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X311 400W 100-240VAC to 12VDC Power Supply	J9581A
HP 3800-48G-4SFP+ Switch (J9576A)	
HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B

Accessories

HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X311 400W 100-240VAC to 12VDC Power Supply	J9581A
HP 3800-24G-2XG Switch (J9585A)	
HP X311 400W 100-240VAC to 12VDC Power Supply	J9581A
HP 3800-48G-4XG Switch (J9586A)	
HP X311 400W 100-240VAC to 12VDC Power Supply	J9581A
HP 3800-24G-PoE+-2XG Switch (J9587A)	
HP X312 1000W 100-240VAC to 54VDC Power Supply	J9580A
HP 3800-48G-PoE+-4XG Switch (J9588A)	
HP X312 1000W 100-240VAC to 54VDC Power Supply	J9580A
HP 3800-24SFP-2SFP+ Switch (J9584A)	
HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A

Accessories

HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X311 400W 100-240VAC to 12VDC Power Supply	J9581A

Accessory Product Details

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

HP 3800 4-port Stacking Module (J9577A)	**Management**	HP PCM+; HP PCM; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
	Services	Refer to the HP website at: www.hp.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 HP sales office.
HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)	**Notes**	The rack mounting kit supports the 1U, full width switches in the following switch series and the power supply: V1810 Series, E2510 Series, E2520 Series, E2610 Series, E2810 Series, E2910 Series, E3500 Series, and the E620 Power Supply This universal rack mounting kit is design to fit the following racks: HP 10K 10642, HP 10K 10842, Panduit CN, Panduit CS, Wrightline Vantage S2, APC Netshelter 600mm, and APC Netshelter 800mm. It may well fit many other brands and models too.
	Services	Refer to the HP website at: www.hp.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 HP sales office.
HP 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

Accessory Product Details

	Services	Refer to the HP website at: www.hp.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 HP sales office.

HP 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 HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP X121 1G SFP LC LH Transceiver (J4860C) A small form-factor pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only
	Physical characteristics	Dimensions: 2.17(d) x 0.60(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm) Weight: 0.04 lb. (0.02 kg)
	Environment	Operating temperature: -40°F to 185°F (-40°C to 85°C) Operating relative humidity: 0% to 95% @ 77°F (25°C), noncondensing Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	Cabling	Cable type: • Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance: • 10-70,000 m (single-mode fiber)
	Notes	Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization. For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors.
	Services	Refer to the HP website at: www.hp.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 HP sales office.
HP 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 "HP 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 HP E8200zl, E5400zl, and HP 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 HP website at: www.hp.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 HP sales office.

HP X122 1G SFP LC BX-D Transceiver (J9142B) A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device.	**Ports**		1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)
	Cabling		Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: ● 0.5-10,000 m (single-mode fiber)
	Notes		Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm. Power consumption is 1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE-standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)
	Services		Refer to the HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP X122 1G SFP LC BX-U Transceiver (J9143B) A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device.	**Ports**	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only	
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
		Weight	0.04 lb. (0.02 kg)
	Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)
	Cabling	Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)	
	Notes	Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE-standard 1000BASE-BX10-D ("downstream") device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.) Power consumption is 1 watt maximum.	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X132 10G SFP+ LC SR Transceiver (J9150A) A 10-Gigabit transceiver in SFP+ form-factor that supports the 10-Gigabit SR standard, providing 10-Gigabit connectivity up to 300 m on multimode fiber.	**Ports**	1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-SR); Duplex: full only	
	Connectivity	**Connector type**	LC
		Wavelength	850 nm
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19 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	0% to 85%, noncondensing
		Nonoperating/Storage temperature	-40°F to 185°F (-40°C to 85°C)
		Altitude	up to 10,000 ft. (3 km)

Accessory Product Details

Electrical characteristics	**Power consumption typical**	0.6 W
	Power consumption maximum	0.8 W
Cabling	Cable 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: • 2-26m with 62.5 µm multimode cable @ 160 MHz*km • 2-33m with 62.5 µm multimode cable @ 200 MHz*km • 2-66m with 50 µm multimode cable @ 400 MHz*km • 2-82m with 50 µm multimode cable @ 500 MHz*km • 2-300m with 50 µm multimode cable @ 2000 MHz*km	
	Cable length	2-300m
	Fiber type	Multi Mode
Notes	For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.	
Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X132 10G SFP+ LC LR Transceiver (J9151A)

A 10-Gigabit transceiver in SFP+ form-factor that supports the 10-Gigabit LR standard, providing 10-Gigabit connectivity up to 10 km on single-mode fiber.

Ports	1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-LR); Duplex: full only	
Connectivity	**Connector type**	LC
	Wavelength	1310 nm
Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19 cm)
	Weight	0.04 lb. (.02 kg)
	Transceiver form factor	SFP+
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 185°F (-40°C to 85°C)
	Altitude	up to 10,000 ft. (3 km)
Electrical characteristics	**Power consumption typical**	0.9 W
	Power consumption maximum	1 W
Cabling	Cable type: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance:	

		• 2m-10km with 9/125 µm single-mode cable	
		Cable length	2m to 10km
		Fiber type	Single Mode
	Notes	Conditioning patch cord cables are not supported. For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X132 10G SFP+ LC LRM Transceiver (J9152A) A 10-Gigabit transceiver in SFP+ form-factor that supports the 10-Gigabit LRM standard, for 10-Gigabit connectivity up to 220 m on legacy multimode fiber.	**Ports**	1 LC 10-GbE port (IEEE 802.3aq Type 10Gbase-LRM); Duplex: full only	
	Connectivity	**Connector type**	LC
		Wavelength	1310 nm
	Physical characteristics	**Dimensions**	2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19 cm)
		Weight	0.04 lb. (.02 kg)
		Transceiver form factor	SFP+
	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 185°F (-40°C to 85°C)
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	0.7 W
		Power consumption maximum	1 W
	Cabling	Cable 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 (a mode conditioning patch cord may be needed in some multimode fiber installations); Maximum distance:	
		• 0.5-220m with 62.5 µm multimode cable @ 160/500 MHz*km • 0.5-220m with 62.5 µm multimode cable @ 200/500 MHz*km • 0.5-100m with 50 µm multimode cable @ 400/400 MHz*km • 0.5-220m with 50 µm multimode cable @ 500/500 MHz*km • 0.5-220m with 50 µm multimode cable @ 1500/500 MHz*km	
		Cable length	0.5m to 220m
		Fiber type	Multi Mode

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	Notes	For OM3 cable (50 µm multimode @ 1500/500 MHz*km), a mode-conditioning patch cord is not required. Other multimode cables may require mode-conditioning patch cords to achieve the maximum distances listed above. For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.
	Services	Refer to the HP website at: www.hp.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 HP sales office.

HP X132 10G SFP+ LC ER Transceiver (J9153A) The SFP+ ER Transceiver will transmit 10Gbps over up to 40km using standard OM3 fiber cable. This product expands the HP Networking transceiver portfolio for connections from 0m to 40km. Use only genuine HP transceivers with your HP Networking equipment to ensure reliability and support.	**Ports**		1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-ER); Duplex: full only
	Connectivity	**Connector type**	LC
		Wavelength	1550 nm
	Physical characteristics	**Dimensions**	2.22(d) x 0.55(w) x 0.47(h) in. (5.65 x 1.39 x 1.19 cm)
		Weight	.04 lb., Fully loaded
		Transceiver form factor	SFP+
	Environment	**Operating temperature**	32°F to 158°F (0°C to 70°C)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	-40°F to 185°F (-40°C to 85°C)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	**Power consumption typical**	1.3 W
		Power consumption maximum	1.5 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 40km	
		Fiber type	Single Mode
	Notes	Check switch release notes for minimum version of software required to support this transceiver. Some switches have limits as to how many of this particular transceiver can be installed. See the release notes of the switch software/firmware being used for more details.	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

Accessory Product Details

HP 0.5 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP 1 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP 2 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP 5 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

Accessory Product Details

HP 15 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

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HP 30 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

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HP 50 m Multimode OM3 LC/LC Optical 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 HP website at: www.hp.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 HP sales office.

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HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable (BK837A)	**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: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL OFN FT4, ROHS. Cable also has a longitudal 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 @ 1310 nm @ 23°C as tested in accordance with EIA 455-46
	Services	Refer to the HP website at: www.hp.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 HP sales office.
HP 1 m PremierFlex OM3+ LC/LC Optical Cable (BK838A)	**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: HP 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 HP website at: www.hp.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 HP sales office.

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HP 2 m PremierFlex OM3+ LC/LC Optical Cable (BK839A)	**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: HP 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 HP website at: www.hp.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 HP sales office.
HP 5 m PremierFlex OM3+ LC/LC Optical Cable (BK840A)	**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: HP 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 HP website at: www.hp.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 HP sales office.

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HP 15 m PremierFlex OM3+ LC/LC Optical Cable (BK841A)	**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: HP 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 HP website at: www.hp.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 HP sales office.
HP 30 m PremierFlex OM3+ LC/LC Optical Cable (BK842A)	**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: HP 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 HP website at: www.hp.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 HP sales office.

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HP 50 m PremierFlex OM3+ LC/LC Optical Cable (BK843A)	**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: HP 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 HP website at: www.hp.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 HP sales office.

HP X242 SFP+ SFP+ 1 m Direct Attach Cable (J9281B)	**Connectivity**	Length	3.28 ft. (1 m)
	Physical characteristics	Weight	0.24 lb. (0.11 kg) the cable with an SFP+ transceiver at each end of the cable
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	14ºF to 185ºF (-10ºC to 85ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Notes	0.04 watts maximum per transceiver end
	Notes	Electrical Properties • Cable Characteristic Impedance: 100 ohms • Crosstalk between pairs: 2% max • Time delay: 1.31 nsec/ft Physical Properties • Cable Diameter: 0.180" • Minimum Cable Bend Radius: 1.0"	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

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HP X242 SFP+ SFP+ 3 m Direct Attach Cable (J9283B)	**Connectivity**	Length	10 ft. (3 m)
	Physical characteristics	Weight	.49 lb. (0.22 kg), Fully loaded the cable with an SFP+ transceiver at each end of the cable
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	14ºF to 185ºF (-10ºC to 85ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Notes	0.04 watts maximum per transceiver end
	Notes	Electrical Properties • Cable Characteristic Impedance: 100 ohms • Crosstalk between pairs: 2% max • Time delay: 1.31 nsec/ft Physical Properties • Cable Diameter: 0.180" • Minimum Cable Bend Radius: 1.0"	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X242 SFP+ SFP+ 7 m Direct Attach Cable (J9285B)	**Connectivity**	Length	22.97 ft. (7 m)
	Physical characteristics	Weight	1.02 lb., Fully loaded the cable with an SFP+ transceiver at each end of the cable
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	14ºF to 185ºF (-10ºC to 85ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Notes	0.04 watts maximum per transceiver end
	Notes	Electrical Properties • Cable Characteristic Impedance: 100 ohms • Crosstalk between pairs: 2% max • Time delay: 1.31 nsec/ft Physical Properties • Cable Diameter: 0.180" • Minimum Cable Bend Radius: 1.0"	

Accessory Product Details

	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X244 XFP SFP+ 1 m Direct Attach Cable (J9300A) A 1m direct attach copper cable with an XFP connector attached on one end and an SFP+ connector attached on the other end. This cable provides a low price connectivity option between switches/servers/ storage to interconnect XFP and SFP+ form factors.	**Connectivity**	Length	3.28 ft. (1 m)
	Physical characteristics	Weight	.27 lb. (0.12 kg), Fully loaded cable with XFP transcevier on one end and SFP+ on the other end
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	32ºF to 158ºF (0ºC to 70ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Notes	XFP end consumes 2 watts SFP+ end consumes 0.036 watts	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X244 XFP SFP+ 3 m Direct Attach Cable (J9301A) A 3m direct attach copper cable with an XFP connector attached on one end and an SFP+ connector attached on the other end. This cable provides a low price connectivity option between switches/servers/ storage to interconnect XFP and SFP+ form factors.	**Connectivity**	Length	9.84 ft. (3 m)
	Physical characteristics	Weight	.51 lb. (0.23 kg), Fully loaded cable with XFP transcevier on one end and SFP+ on the other end
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	32ºF to 158ºF (0ºC to 70ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Cabling	Maximum distance: • 3m Direct Attach Cable	
	Notes	XFP end consumes 2 watts SFP+ end consumes 0.036 watts	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

Accessory Product Details

HP X244 XFP SFP+ 5 m Direct Attach Cable (J9302A) A 5m direct attach copper cable with an XFP connector attached on one end and an SFP+ connector attached on the other end. This cable provides a low price connectivity option between switches/servers/ storage to interconnect XFP and SFP+ form factors.	**Connectivity**	Length	16.4 ft. (5 m)
	Physical characteristics	Weight	.74 lb. (0.34 kg), Fully loaded cable with XFP transcevier on one end and SFP+ on the other end
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	32ºF to 158ºF (0ºC to 70ºC)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Notes	XFP end consumes 2 watts SFP+ end conumes 0.036 watts	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

HP X111 100M SFP LC FX Transceiver (J9054C)	**Ports**	1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full	
	Physical characteristics	Dimensions	2.7(d) x 0.54(w) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)
		Weight	0.06 lb. (0.03 kg)
	Environment	Operating temperature	32°F to 158°F (0°C to 70°C)
		Operating relative humidity	5% to 95%
		Nonoperating/Storage temperature	-40°F to 185°F (-40°C to 85°C)
		Nonoperating/Storage relative humidity	5% to 85%
		Altitude	up to 10,000 ft. (3 km)
	Cabling	Cable type: 62.5/125 ìm or 50/125 ìm (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 km (full duplex) or 412 m (half duplex)	
	Notes	Transmitter wavelength: 1310nm Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9054B 100-FX SFP-LC Transceiver" on the "ProCurve Mini-GBICs and SFPs" Manuals Web page.	
	Services	Refer to the HP website at: www.hp.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 HP sales office.	

Accessory Product Details

HP X112 100M SFP LC BX-D Transceiver (J9099B)

A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "downstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device.

Ports		1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only
Physical characteristics	**Dimensions**	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
	Weight	0.04 lb. (0.03 kg)
Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
	Operating relative humidity	0% to 95%, noncondensing
	Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
Cabling		Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)
Notes		Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm. Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device. (A 100-BX-D transceiver can only connect to a 100-BX-U product. You cannot connect two 100-BX-D transceivers together.)
Services		Refer to the HP website at: www.hp.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 HP sales office.

HP X112 100M SFP LC BX-U Transceiver (J9100B)

A small form-factor pluggable (SFP) 100-Megabit BX (bi-directional) "upstream" transceiver that provides 100 Mbps full-duplex connectivity up to 10 km on one strand of singlemode fiber. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10-D ("downstream") device.

Ports		1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-U); Duplex: full only
Physical characteristics	**Dimensions**	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
	Weight	0.07 lb. (.03 kg)
Environment	**Operating temperature**	32ºF to 158ºF (0ºC to 70ºC)
	Operating relative humidity	0% to 95%, noncondensing
	Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
Cabling		Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance:

	• 0.5-10,000 m (single-mode fiber)
Notes	For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9100B connects to the J9099B "downstream" transceiver, or to any IEEE-standard 100BASE-BX10- D ("downstream") device. (A 100-BX-U transceiver can only connect to a 100-BX-D product. You cannot connect two 100-BX-U transceivers together.) Transmit wavelength: 1310 nm. Receive wavelength: 1550 nm. Power consumption is 1.1 watts maximum.
Services	Refer to the HP website at: www.hp.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 HP sales office.

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