

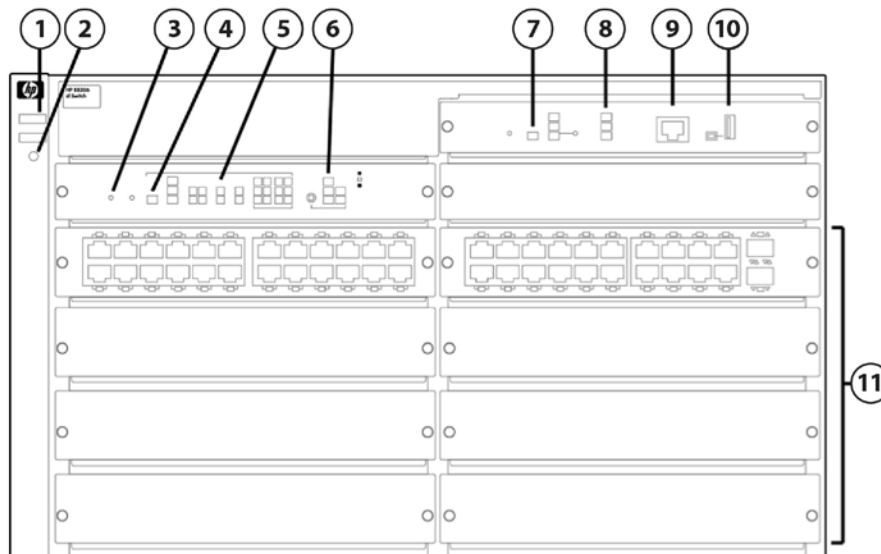
## Overview

### HPE 8200 zl Switch Series

#### Product overview

The HPE 8200 zl Switch Series offers high performance, scalability, and a wide range of features in a high-availability platform that dramatically reduces complexity and the total cost of ownership. As part of a unified wired and wireless network infrastructure solution, the 8200 zl Switch Series provides platform technology, system software, system management, application integration, wired and wireless integration, network security, and support that are common across HPE modular and fixed-port switches. Together, these features deliver an agile, cost-effective, high-availability network solution.

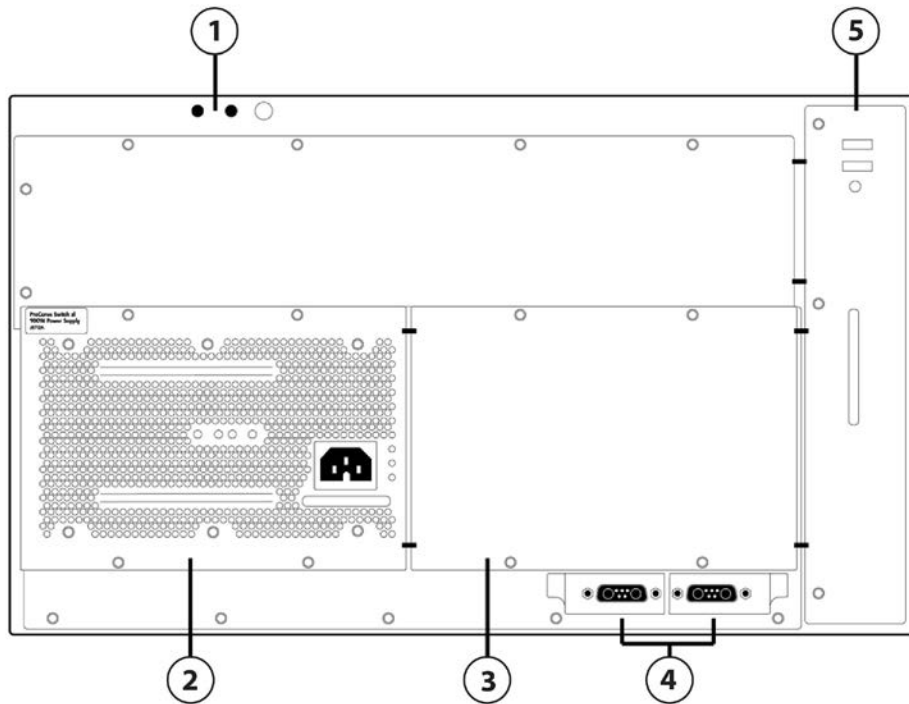
With key technologies to provide solution longevity, the 8200 zl Switch Series delivers long-term investment protection without added complexity for network core, aggregation, and high-availability access layer deployments. In addition to all of these capabilities, this switch series comes with Limited Lifetime Warranty 2.0—making it a compelling switching solution.



#### Front of 8206 zl Switch J9638A

- |   |  |    |   |
|---|--|----|---|
| 1 | Power and Fault LEDs   | 7  | Management Module Reset button, and Status LEDs                                       |
| 2 | Locator LED  | 8  | Component Status LEDs Switch  |
| 3 | Reset and Clear buttons                                      | 9  | Console Port  |
| 4 | Self-test LED  | 10 | Auxiliary Port  |
| 5 | Status LEDs for the Fans, Power Supplies, and Switch Modules | 11 | Switch Modules and slots with Link and Mode LEDs for each port located on each module |
| 6 | LED Mode Select button and indicator LEDs                    |    |   |

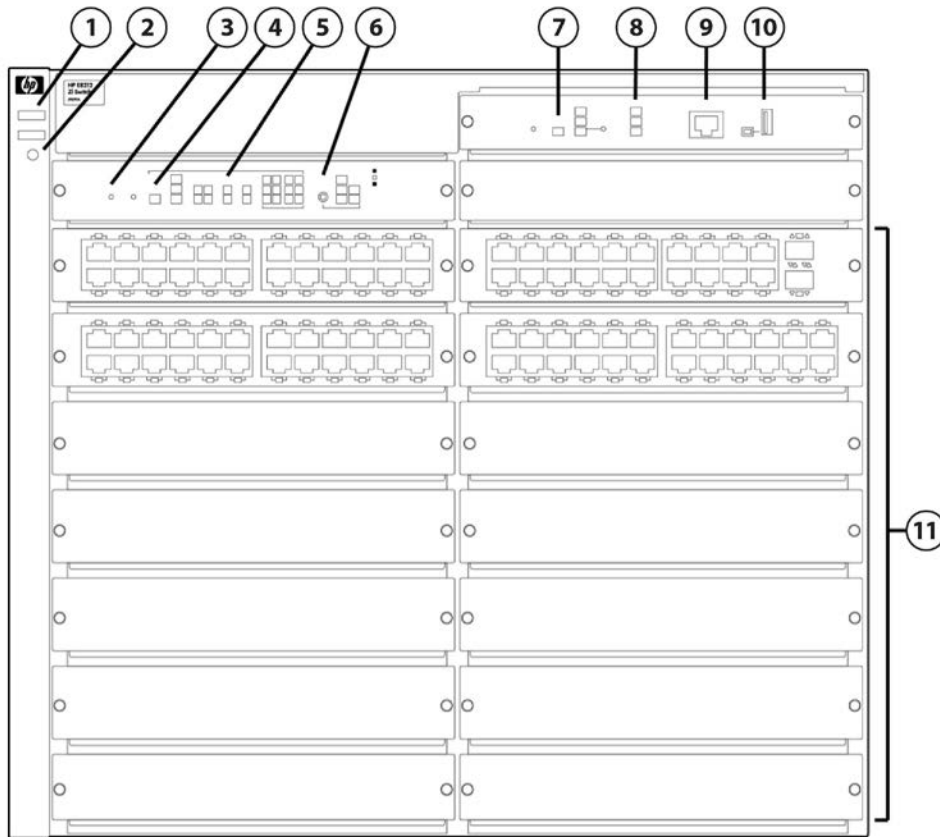
## Overview



**Back of the 8206zl Switch J9638A**

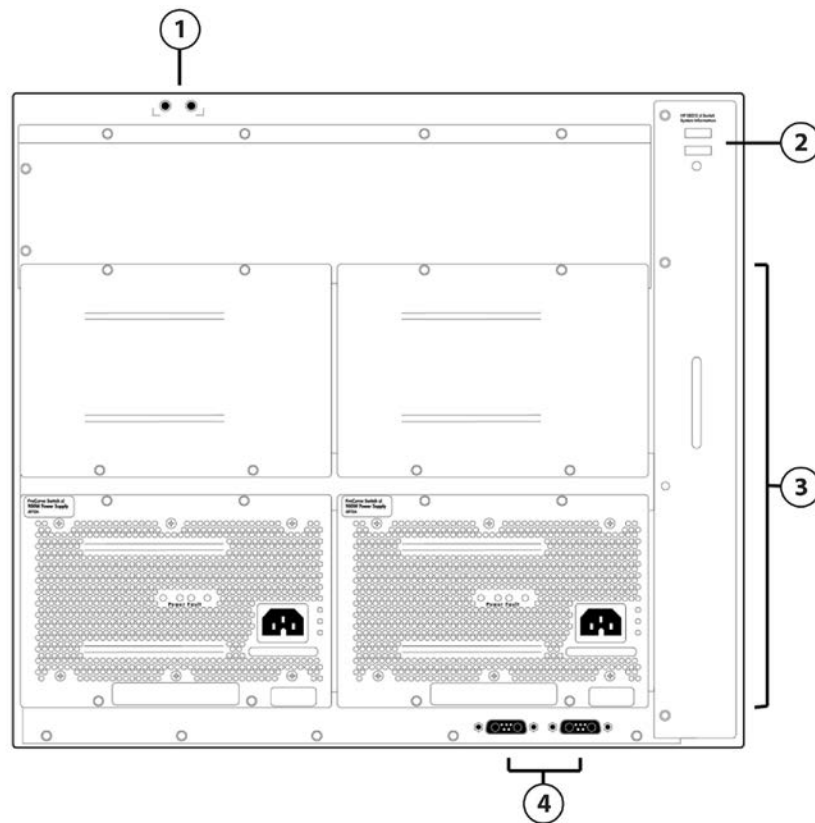
- |   |                                       |   |                                    |
|---|---------------------------------------|---|------------------------------------|
| 1 | Grounding lug mounting holes External | 4 | External PoE/PoE+ power connectors |
| 2 | Power supply                          | 5 | Fan Power, Fault and Locator LEDs  |
| 3 | Optional redundant power supply       |   |                                    |

## Overview

**Front of 8212 zlSwitch J9639A**

- |   |  |    |   |
|---|--|----|---|
| 1 | Power and Fault LEDs   | 7  | Management Module Reset button, and Status LEDs                                       |
| 2 | Locator LED  | 8  | Component Status LEDs Switch  |
| 3 | Reset and Clear buttons                                      | 9  | Console Port  |
| 4 | Self-test LED  | 10 | Auxiliary Port  |
| 5 | Status LEDs for the Fans, Power Supplies, and Switch Modules | 11 | Switch Modules and slots with Link and Mode LEDs for each port located on each module |
| 6 | LED Mode Select button and indicator LEDs                    |    |   |

## Overview



### Rear of 8212 zSwitch J9639A

- |   |                                       |   |                                     |
|---|---------------------------------------|---|-------------------------------------|
| 1 | Grounding lug mounting holes External | 3 | Slots for installing power supplies |
| 2 | Fan Power, Fault and Locator LEDs     | 4 | External PoE/PoE+ power connectors  |

## Key features

- Core, distribution, mission-critical access layer
- Advanced high-availability switches
- Integration with HPE AllianceONE solutions
- L2-to-L4 intelligent edge feature set
- Enterprise-class performance and security

## Features and Benefits

### Software-defined networking

- **OpenFlow**  
supports OpenFlow 1.0 and 1.3 specifications to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

## Overview

### Unified Wired and Wireless

- **HTTP redirect function**  
supports HPE Intelligent Management Center (IMC) bring your own device (BYOD) solution

### Quality of Service (QoS)

- **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
- **Layer 4 prioritization**  
enables prioritization based on TCP/UDP port numbers
- **Traffic prioritization**  
allows real-time traffic classification into eight priority levels mapped to eight queues
- **Bandwidth shaping**
  - **Port-based rate limiting**  
provides per-port ingress-/egress-enforced increased bandwidth
  - **Classifier-based rate limiting**  
uses an access control list (ACL) to enforce increased bandwidth for ingress traffic on each port
  - **Reduced bandwidth**  
provides per-port, per-queue egress-based reduced bandwidth
- **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

### HPE AllianceONE integration

- **HPE AllianceONE Services zl Module**  
allows you to embed applications directly into the network, either distributed throughout the network at the network edge or centralized in the core or distribution layer; for more information about the HPE AllianceONE solution, visit the Hewlett Packard Enterprise website

### Management

- **Remote intelligent mirroring**  
mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote HPE 8200 zl, 6600, 6200 yl, 5400 zl, or 3500 Switch anywhere on the network
- **RMON, XRMON, and sFlow v5**  
provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**  
advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **Uni-Directional Link Detection (UDLD)**  
monitors a 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
- **HPE unified core-to-edge device/network management tools**

## Overview

provide HPE networking portfolio-common device-level tools (CLI, Web GUI, and Menu) plus seamless integration into HPE

PCM+/Identity Driven Manager (IDM) network management deployments

- **Command authorization**  
leverages RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity
- **Friendly port names**  
allow assignment of descriptive names to ports
- **Dual flash images**  
provides independent primary and secondary operating system files for backup while upgrading or fine-tuning the switch configuration
- **Multiple configuration files**  
can be stored to the flash image
- **HPE unified core-to-edge features**  
HPE ProVision portfolio-common feature implementation allows faster solution deployment
- **Comware- CLI**
  - **Comware-compatible CLI:** bridges the experience of Hewlett Packard Enterprise Comware CLI users who are using the ProVision CLI
  - **Display and fundamental Comware CLI commands:** are natively embedded in the switch CLI; display output is formatted as on Comware-based switches; fundamental commands provide Comware-familiar initial switch setup
  - **Configuration Comware CLI commands:** when Comware commands are entered, CLI help is elicited to formulate the correct ProVision software CLI command

## Connectivity

- **High-density port connectivity**  
provides 12 interface module slots, up to 288 wire-speed 10/100/1000 PoE-enabled ports, or 96 10-GbE ports per system
- **IEEE 802.3az Energy Efficient Ethernet**  
lowers power consumption in periods of low-link usage (supported on v2 zl 10/100/1000 and 10/100 modules)
- **IEEE 802.3af Power over Ethernet (PoE)**  
provides up to 15.4 W per port to IEEE 802.3af-compliant PoE-powered devices such as IP phones, wireless access points, and security cameras
- **IEEE 802.3at Power Over Ethernet Plus**  
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
- **Jumbo frames**  
on Gigabit Ethernet and 10-Gigabit Ethernet ports, jumbo frames allow high-performance remote backup and disaster-recovery services
- **HPE unified core-to-edge hardware**  
HPE ProVision family-common interface and service modules, Gigabit optics/10 GbE transceivers, and power supplies enable sparing simplicity
- **Prestandard PoE support**  
detects and provides power to prestandard PoE devices; see the list of supported devices in the product FAQs at <http://www.hpe.com/networking>
- **Auto-MDIX**  
automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- **IPv6**
  - **IPv6 host**  
enables switches to be managed in an IPv6 network

## Overview

- **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
- **IPv6 routing**  
supports static and OSPFv3 routing protocols
- **6in4 tunneling**  
supports encapsulation of IPv6 traffic in IPv4 packets
- **Security**  
provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown

## Performance

- **High-speed, high-capacity architecture**  
1.12 Tbps crossbar switching fabric provides intra-module and inter-module switching with 739.2 million pps throughput on the purpose-built HPE ProVision ASICs
- **Selectable queue configurations**  
allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications
- **Scalable system design**  
chassis architecture/backplane provides built-in performance capacity/headroom to support next-generation high-density/high-speed connectivity

## Resiliency and high availability

- **Virtual Router Redundancy Protocol (VRRP)**  
allows groups of two routers to dynamically back each other up to create highly available routed environments in IPv4 and IPv6 networks
- **Nonstop switching**  
improves network availability to better support critical applications such as unified communication and mobility; interface and fabric modules continue switching traffic during failover from active to standby management module
- **Nonstop routing**  
enhances Layer 3 high availability; OSPFv2/v3 and VRRP will continue to operate and route network traffic during failover from an active to a standby management module
- **Redundant management, fabric, and power**  
provide enhanced system availability and continuity of operations
- **Distributed trunking**  
enables loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
- **IEEE 802.1s Multiple Spanning Tree Protocol**  
provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HPE port trunking**  
support up to 144 trunks, each with up to eight links (ports) per trunk
- **Proven ASIC and system architecture**  
the HPE ProVision ASIC and platform architecture, leveraged from HPE's successful 5400 zl, 3500, 6600, and 6200 zl

## Overview

switch series, reduces technology risk and provides reliable support and flexibility

- **HPE zl family components**  
employ market-proven intelligent edge switch interface modules, optics, and power supplies to reduce technology risk and enhance system reliability
- **Hot-swappable modules**  
interface, management, and fabric modules as well as mini-GBIC optics and power supplies can be removed, swapped, or added to the system without interrupting ongoing switch operations
- **Redundant, hot-swappable cooling**  
redundant fan design and hot-swappable fan tray provide continuity of operation in case of a single fan failure
- **Passive system design**  
passive chassis backplane (no traffic-forwarding active componentry) provides system reliability and reduces the impact of a component failure
- **Virtual Route Redundancy Protocol**  
allows groups of two routers to dynamically back each other up to create highly available routed environments
- **NEW SmartLink**  
provides easy-to-configure link redundancy of active and standby links

## Layer 2 switching

- **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
- **GARP VLAN Registration Protocol**  
allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1ad Q-in-Q**  
increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- **MAC-based VLAN**  
provides granular control and security; uses RADIUS to map a MAC address/user to specific VLANs (requires v2 modules)
- **Rapid Per-VLAN Spanning Tree (RPVST+)**  
allows each VLAN to build a separate spanning tree to improve link bandwidth usage; is compatible with PVST+

## Layer 3 services

- **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
- **Loopback interface address**  
defines an address in Routing Information Protocol (RIP) and Open Standard Path First (OSPF), improving diagnostic capability
- **Route maps**  
provide more control during route redistribution; allow filtering and altering of route metrics
- **DHCP server:**  
centralizes and reduces the cost of IPv4 address management

## Layer 3 routing

- **Static IP routing**



## Overview

provides manually configured routing for both IPv4 and IPv6 networks

- **Routing Information Protocol (RIP)**  
provides RIPv1 and RIPv2 routing
- **OSPF**  
provides OSPFv2 for IPv4 routing and OSPFv3 for IPv6 routing
- **Policy-based routing**  
uses a classifier to select traffic that can be forwarded based on policy set by the network administrator (requires v2 or higher modules)
- **Border Gateway Protocol (BGP)**  
provides IPv4 Border Gateway Protocol routing, which is scalable, robust, and flexible

## Security

- **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 user authentication methods**
  - **IEEE 802.1X users per port**  
provides authentication of multiple IEEE 802.1X users per port
  - **Web-based authentication**  
authenticates from a Web browser for clients that do not support IEEE 802.1X supplicant
  - **MAC-based authentication**  
authenticates client with the RADIUS server based on a client's MAC address
  - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**  
accepts up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **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
- **DHCP protection**  
blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Secure management access**  
securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **Management Interface Wizard**  
helps secure management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB at the desired level
- **Switch CPU protection**  
provides automatic protection against malicious network traffic trying to shut down the switch
- **ICMP throttling**  
defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
- **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
- **Dynamic ARP protection**  
blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **Detection of malicious attacks**

## Overview

monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected

- **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
- **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
- **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
- **Security banner**  
displays a customized security policy when users log in to the switch
- **STP Root Guard**  
protects the root bridge from malicious attacks or configuration mistakes
- **Integrated Threat Management applications**  
includes advanced, scalable, switch-integrated security tools such as stateful firewall, intrusion detection/prevention system (IDS/IPS), and VPN concentrator via the HPE Threat Management Services zl Module

## Convergence

- **IP multicast routing**  
includes PIM Sparse and Dense modes to route IP multicast traffic
- **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
- **PoE allocations**  
support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings
- **Auto VLAN configuration for voice**
  - **RADIUS VLAN**  
uses a standard RADIUS attribute and LLDP-MED to automatically configure a VLAN for IP phones
  - **CDPv2**  
uses CDPv2 to configure legacy IP phones
- **Local MAC Authentication**  
assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes

## Overview

### Flexibility

- **Unified wired and wireless deployment and management**  
employs the MSM765zl mobility controller and offers secure, advanced wireless services with simplified management and unified wired and wireless operation across the network
- **Complete feature set**  
provides Gigabit PoE for edge VoIP solutions, scalable 10 GbE for enterprise-class distribution-layer implementations, advanced wireless management for comprehensive mobility solutions, and critical high-availability features for midmarket core network deployments
- **Programmable ASIC design**  
allows the seamless addition of new QoS and security features over time without costly hardware upgrades

### Warranty and support

- **Limited Lifetime Warranty**  
See <http://www.hpe.com/networking/warrantysummary> for warranty and support information included with your product purchase.
- **Software releases**  
to find software for your product, refer to <http://www.hpe.com/networking/support>; for details on the software releases available with your product purchase, refer to <http://www.hpe.com/networking/warrantysummary>

## Configuration

### Build To Order:

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

#### Standard Switch Chassis

HP 8206 zl Switch with Premium Software	J9640A
<ul style="list-style-type: none"> <li>• 1 Power Supply required</li> <li>• 1 - J9092A - HPE E8200 zl Management Module Included</li> <li>• 2 - J9093A - HPE E8200 zl Fabric Module Included</li> <li>• 1 - J9095A - HPE E8200 zl System Support Module Included</li> <li>• 6U - Height</li> </ul>	
HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software	J9638A
<ul style="list-style-type: none"> <li>• 44 RJ-45 autosensing 10/100/1000 PoE+ ports</li> <li>• 1 - J9306A - HPE 1500 W PoE+ zl Power Supply Included</li> <li>• 1 - J9092A - HPE E8200 zl Management Module Included</li> <li>• 2 - J9093A - HPE E8200 zl Fabric Module Included</li> <li>• 1 - J9095A - HPE E8200 zl System Support Module Included</li> <li>• 1 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included</li> <li>• 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)</li> <li>• 6U - Height</li> </ul>	See Configuration <b>NOTE:1, 2, 5</b>
HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software	J9638A
<ul style="list-style-type: none"> <li>• C15 PDU Jumper Cord (NA/MEX/TW/JP)</li> </ul>	
HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software	J9638A
<ul style="list-style-type: none"> <li>• C15 PDU Jumper Cord (ROW)</li> </ul>	
HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software	J9638A
<ul style="list-style-type: none"> <li>• NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	
HP 8212 zl Switch with Premium Software	J9641A
<ul style="list-style-type: none"> <li>• 2 Power Supply required</li> <li>• 1 - J9092A - HPE E8200 zl Management Module Included</li> <li>• 2 - J9093A - HPE E8200 zl Fabric Module Included</li> <li>• 1 - J9095A - HPE E8200 zl System Support Module Included</li> <li>• 9U - Height</li> </ul>	

## Configuration

HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software	J9639A
<ul style="list-style-type: none"> <li>• 92 RJ-45 autosensing 10/100/1000 PoE+ ports</li> <li>• 2 - J9306A - HPE 1500 W PoE+ zl Power Supply Included</li> <li>• 1 - J9092A - HPE E8200 zl Management Module Included</li> <li>• 2 - J9093A - HPE E8200 zl Fabric Module Included</li> <li>• 1 - J9095A - HPE E8200 zl System Support Module Included</li> <li>• 3 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included</li> <li>• 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)</li> <li>• 9U - Height</li> </ul>	See Configuration <b>NOTE:1, 2, 5</b>
HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software	J9639A
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HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software	J9639A
<ul style="list-style-type: none"> <li>• NEMA L6-20P Cord (NA/MEX/JP/TW)</li> </ul>	

### Note 1 The following Transceivers install into this Chassis:

HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP LC LH Transceiver	J4860C
HPE 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
HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

### Note 2 Localization required. (See Localization Menu for list.)

## Configuration

**Note 5** If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in North America, Mexico Taiwan, and Japan)

### Box Level Integration CTO Models

#### CTO Solution SKU

HPE 82xx CTO Switch Solution

J9849A

- SSP trigger SKU

#### CTO Base SKU

HP 8206 zl Switch with Premium Software

J9640A

- 1 Power Supply required
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 6U - Height

See Configuration

**NOTE:9**

HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software

J9638A

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports
- 1 - J9306A - HPE 1500 W PoE+ zl Power Supply Included
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 1 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included
- 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)
- 6U - Height

See Configuration

**NOTE:1, 2, 5, 8, 9**

PDU CABLE NA/MEX/TW/JP

#B2B

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

PDU CABLE ROW

#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

## Configuration

### HP 8212 zl Switch with Premium Software

- 2 Power Supply required
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 9U - Height

J9641A  
See Configuration

**NOTE:9**

### HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software

- 92 RJ-45 autosensing 10/100/1000 PoE+ ports
- 2 - J9306A - HPE 1500 W PoE+ zl Power Supply Included
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 3 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included
- 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)
- 9U - Height

J9639A  
See Configuration

**NOTE:1, 2, 5, 8, 9**

### PDU CABLE NA/MEX/TW/JP

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

#B2B

### PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

#B2C

### High Volt Switch to Wall Power Cord

- NEMA L6-20P Cord (NA/MEX/JP/TW)

#B2E

**Note 1**    **The following Transceivers install into this Chassis : (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable**

HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP LC LH Transceiver	J4860C
HPE 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
HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B

## Configuration

HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

**Note 2** Localization required (See Localization Menu)

**Note 5** If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in North America, Mexico Taiwan, and Japan)

**Note 8** If this Switch is selected, Then a Minimum of 1 factory integrated accessory must be ordered and integrated to CTO chassis. See Menu below, option must have a #0D1 to be integrated to the CTO Chassis.

**Note 9** If the Switch Chassis is to be Box Level Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the J9849A - HPE 82xx CTO Enablement. (Min 1/Max 1 Switch per SSP)

### Rack Level Integration CTO Models

HP 8206 zl Switch with Premium Software J9640A

- 1 Power Supply required
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 6U - Height

HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software

J9638A

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports
- 1 - J9306A - HPE 1500 W PoE+ zl Power Supply Included
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 1 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included
- 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)
- 6U - Height

See Configuration

**NOTE:1, 9**

PDU CABLE NA/MEX/TW/JP

#B2B

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

PDU CABLE ROW

#B2C

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

#B2E



## Configuration

- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 8212 zl Switch with Premium Software

J9641A

- 2 Power Supply required
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 9U - Height

HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software

J9639A

See Configuration

**NOTE:1, 9**

- 92 RJ-45 autosensing 10/100/1000 PoE+ ports
- 2 - J9306A - HPE 1500 W PoE+ zl Power Supply Included
- 1 - J9092A - HPE E8200 zl Management Module Included
- 2 - J9093A - HPE E8200 zl Fabric Module Included
- 1 - J9095A - HPE E8200 zl System Support Module Included
- 3 - J9534A - HPE 24-port Gig-T PoE+ v2 zl Module Included
- 1 - J9536A - HPE 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module Included (Min 0 // Max 2 SFP+ Transceivers)
- 9U - Height

PDU CABLE NA/MEX/TW/JP

#B2B

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

PDU CABLE ROW

#B2C

- C15 to C14 Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

### Configuration rules

**Note 1**      **The following Transceivers install into this Chassis : (Use #0D1 or #B01 quoted to switch if switch is CTO) - if applicable**

HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP LC LH Transceiver	J4860C
HPE 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
HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A

## Configuration

HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

**Note 2**      **Localization required (See Localization Menu)**

**Note 9**      **Localization required on orders without #B2B or #B2C options.**

### Internal Power Supplies

J9640x only - System (std 0 // max=2) User Selection (min 1 / max=2) per Chassis

J9638x only - System (std 1 // max=2) User Selection (min 0 / max=1) per Chassis

J9641x only - System (std 0 // max=4) User Selection (min 2 / max=4) per Chassis

J9639x only - System (std 2 // max=4) User Selection (min 0 / max=2) per Chassis

HPE 1500W PoE+ zl Power Supply

- C15 Outlet

J9306A  
See Configuration  
**NOTE:1, 2, 6**

PDU CABLE NA/MEX/TW/JP

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

J9306A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9306A#B2C

High Volt Switch to Wall Power Cord

- NEMA L6-20P Cord (NA/MEX/JP/TW)

J9306A#B2E

HPE 875W zl Power Supply

- C15 Outlet

J8712A#0D1  
See Configuration  
**NOTE:1, 2, 5, 6**

PDU CABLE NA/MEX/TW/JP

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

J8712A#B2B

PDU CABLE ROW

J8712A#B2C

## Configuration

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord

J8712A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

HPE 1500W zI Power Supply

J8713A

- C20 Outlet

See Configuration

**NOTE:1, 2, 5, 6**

C19 PDU WW

J8713A#B2D

- C19 to C20 Jumper Cord

High Volt Switch to Wall Power Cord

J8713A#B2E

- NEMA L6-20P Cord (NA/MEX/JP/TW)

**Note 1** Power Supplies cannot be mixed for a switch enclosure

**Note 2** Localization required on orders without #B2B, #B2C, or #B2E options.

**Note 5** This power supply is not supported on the J9638x and J9639x switches.

**Note 6** If #B2E is selected Then replace Localized option with #B2E for power supply and with #B2E for switch . (Offered only in North America, Mexico Taiwan, and Japan)

**Remarks:** "Drop down under power supply should offer the following options and results:

Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)

Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)

High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)"

## Modules

### Interface Modules

J9640x only - System (std 0 // max=6) User Selection (min 0 / max=6) per Chassis

J9641x only - System (std 0 // max=12) User Selection (min 0 / max=12) per Chassis

## Configuration

J9638x only - System (std 2 // max=6) User Selection (min 0 / max=4) per Chassis  
 J9639x only - System (std 4 // max=12) User Selection (min 0 / max=8) per Chassis

HPE 20-port GT PoE+/4-port SFP v2 zl Mod

- min=0 \ max=4 SFP Transceivers

J9535A

See Configuration

**NOTE:1**

HPE 24-port SFP v2 zl Module

- min=0 \ max=24 SFP Transceivers

J9537A

See Configuration

**NOTE:1**

HPE 12p Gig-T PoE+/12p SFP v2 zl Mod

- min=0 \ max=12 SFP Transceivers

J9637A

See Configuration

**NOTE:1**

HPE 20-port Gig-T / 4-port SFP v2 zl Mod

- min=0 \ max=4 SFP Transceivers

J9549A

See Configuration

**NOTE:1**

HPE 4-port 10GbE SFP+ zl Module

- min=0 \ max=4 SFP+ Transceivers

J9309A

See Configuration

**NOTE:2**

HPE 8-port 10 GbE SFP+ v2 zl Module

- min=0 \ max=8 SFP+ Transceivers

J9538A

See Configuration

**NOTE:5**

HPE 20p GT PoE+ / 2p SFP+ v2 zl Module

- min=0 \ max=2 SFP+ Transceivers

J9536A

See Configuration

**NOTE:5**

HPE 20-port Gig-T / 2-port SFP+ v2 zl Mod

- min=0 \ max=2 SFP+ Transceivers

J9548A

See Configuration

**NOTE:5**

HPE 4-Port 10 GbE X2 zl Module

- min=0 \ max=4 X2 Transceivers

J8707A

See Configuration

**NOTE:3**

HPE 4-Port 10 GbE CX4 zl Module

- min=0 \ max=4 CX4 Media Converter

J8708A

HPE 8-port 10GBase-T v2 zl Module

- No Transceivers

J9546A

## Configuration

HPE 24-Port 10/100/1000 PoE zl Module	J8702A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE 20p 10/100/1000 PoE+/4p MGBIC zl Mod	J9308A
<ul style="list-style-type: none"> <li>min=0 \ max=4 SFP Transceivers</li> </ul>	See Configuration <b>NOTE:1</b>
HPE 20-Port Gig-T/4-Port Mini-GBIC zl Module	J8705A
<ul style="list-style-type: none"> <li>min=0 \ max=4 SFP Transceivers</li> </ul>	See Configuration <b>NOTE:11</b>
HPE 24-Port Mini-GBIC zl Module	J8706A
<ul style="list-style-type: none"> <li>min=0 \ max=24 SFP Transceivers</li> </ul>	See Configuration <b>NOTE:11</b>
HPE 24-Port 10/100/1000 PoE+ zl Module	J9307A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE 24-port Gig-T PoE+ v2 zl Module	J9534A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE 24-Port 10/100 PoE+ zl Module	J9478A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE 24-port 10/100 PoE+ v2 zl Module	J9547A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE 24-port Gig-T v2 zl Module	J9550A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	
HPE MSM765 zl Mobility Controller	J9370A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:6, 7</b>
HPE MSM775 zl Premium Controller Module	J9840A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:9</b>
HPE Surv Brch Com zl Mod pwrby Msft Lync	J9485A

## Configuration

<ul style="list-style-type: none"> <li>No Transceivers.</li> <li>Double Height Module, takes up 2 Vertical slots*</li> </ul>	See Configuration <b>NOTE: 6, 7, 8</b>
HPE Svc zIMod f/AvayaSBC pwrby AcmePacket	J9486A
<ul style="list-style-type: none"> <li>No Transceivers.</li> <li>Double Height Module, takes up 2 Vertical slots*</li> </ul>	See Configuration <b>NOTE:6, 7, 8</b>
HPE Advanced Services v2 zl Module w/ HDD	J9857A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:10</b>
HPE Advanced Services v2 zl Module w/ SSD	J9858A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:10</b>
HPE Adv Srvs zl Mod w/XenServer Platform	J9747A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:6, 7</b>
HPE Adv Srvs zl Mod w/vSphere Platform	J9748A
<ul style="list-style-type: none"> <li>No Transceivers</li> </ul>	See Configuration <b>NOTE:6, 7</b>

### Configuration NOTES:

<b>Note 1</b>	<b>The following Transceivers install into this Module: (Use #0D1 quoted to switch if switch is CTO)</b>
HPE X111 100M SFP LC FX Transceiver	J9054C
HPE X112 100M SFP LC BX-D Transceiver	J9099B
HPE X112 100M SFP LC BX-U Transceiver	J9100B
HPE X121 1G SFP LC LH Transceiver	J4860C
HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X122 1G SFP LC BX-D Transceiver	J9142B
HPE X122 1G SFP LC BX-U Transceiver	J9143B
HPE X121 1G SFP RJ45 T Transceiver	J8177C
<b>Note 2</b>	<b>The following Transceivers install into this Module: (Use #0D1 or #B01 quoted to switch if switch is CTO)</b>
HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B

## Configuration

HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

**Note 3**      **The following Transceivers install into this Module: (Use #0D1 quoted to switch if switch is CTO)**

HPE X131 10G X2 SC SR Transceiver	J8436A
HP X131 10G X2 SC LR Transceiver	J8437A
HP X131 10G X2 SC ER Transceiver	J8438A
HP X131 10G X2 CX4 Transceiver	J8440C
HP X131 10G X2 SC LRM Transceiver	J9144A

**The following Transceivers install into this Module: (Use #0D1 quoted to switch if switch is CTO)**

HPE X121 1G SFP LC LH Transceiver	J4860C
HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HPE X121 1G SFP RJ45 T Transceiver	J8177C
HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
ProCurve 10-GbE SFP+ 10m Direct Attach Cable	J9286A
HPE X242 10G SFP+ 15m DAC Cable	J9287A

**Note 6**      **If this module is selected, Then:**

**J9641A, J9639A Max = 4 Modules of any combination or pairing of the following modules: J9517A, J9485A, J9486A, J9289A, J9483A, J9666A, J9747A, J9748A. Double Height Modules occupy 2 vertical slots.**

**J9640A, J9638A Max = 2 Slots for Modules of any combination or pairing of the following modules: J9517A, J9485A, J9486A, J9289A, J9483A, J9666A, J9747A, J9748A. Double Height Modules occupy 2 vertical slots.**

**Note 7**      **If this module is selected, Then show following message - For all OA modules, it is preferred that they be populated on the left side of the Chassis as it gets better airflow.**

## Configuration

- Note 8** This module occupies 2 Vertical Slots.
- Note 9** Maximum of this Module per Chassis:  
 J9638x min=0\max= 4 per Chassis  
 J9640x min=0\max=5 per Chassis  
 J9639x, J9641x min=0\max=6 per Chassis  
 There are no restrictions on which slots these modules may go in.
- Note 10** Maximum of this Module per Chassis:  
 J9638x, J9640x min=0\max=3 per Chassis  
 J9639x, J9641x min=0\max=6 per Chassis  
 There are no restrictions on which slots these modules may go in.

### Management Modules

#### System (std 1 // max 2) User Selection (min 0 / max 1)

HP 8200 zl Management Module J9092A

### Fabric Modules

#### System (std 2 // max 2) User Selection (min 0 / max 0)

HP 8200 zl Fabric Module J9093A

Order for Spares only.

### System Support Modules

#### System (std 1 // max 1) User Selection (min 0 / max 1)

HP 8200 zl System Support Module J9095A

Order for Spares only.

## Transceivers

### SFP Transceivers

HPE 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
HPE X121 1G SFP LC LH Transceiver	J4860C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP LC SX Transceiver	J4858C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HPE X121 1G SFP RJ45 T Transceiver	J8177C

### SFP+ Transceivers

HPE X132 10G SFP+ LC ER Transceiver	J9153A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A
HPE X132 10G SFP+ LC SR Transceiver	J9150A



## Configuration

HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A

### X2 Transceivers

HP X131 10G X2 SC ER Transceiver	J8438A
HP X131 10G X2 SC LR Transceiver	J8437A
HP X131 10G X2 SC LRM Transceiver	J9144A
HP X131 10G X2 SC SR Transceiver	J8436A

## Cables

### Multi-Mode Cables

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

## Switch Enclosure Options

### License

HP 8200 zl Switch Premium License	J9474A
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### Fan Trays

HP 8212 zl Fan Tray	J9094A
HP 8206 zl Switch Fan Tray	J9476A

## Survivable Branch Communication Upgrades

## Configuration

Sangoma 2-port T1/E1/J1 Telephony Card	J9488A
Sangoma 4-port T1/E1/J1 Telephony Card	J9489A
Sangoma 4-port FXO Telephony Card	J9516A
Sangoma 4-port FXS Telephony Card	J9482A
Sangoma 2-p FXO / 2-p FXS Telephony Card	J9518A
Sangoma 1-port T1/E1/J1 Telephony Card	J9487A

### US Federal Government certifications

HP z1 Chassis FIPS 10K Rack Mounting Kit	J9708A See Configuration <b>NOTE:1</b>
HPE 16mm x 32mm Tmpr-Evidence (20) Labels	J9740A See Configuration <b>NOTE:1</b>
HPE 16mm x 32mm Tmpr-Evidence (120) Label	J9709A See Configuration <b>NOTE:1</b>
HP 8206 z1 FIPS Opacity Shield Kit	J9712A See Configuration <b>NOTE:1</b>
HP 8212 z1 FIPS Opacity Shield Kit	J9713A See Configuration <b>NOTE:1</b>
HP 8206 z1 High Performance Fan Tray	J9723A See Configuration <b>NOTE:1</b>
HP 8212 z1 High Performance Fan Tray	J9724A See Configuration <b>NOTE:1</b>

**Note 1** Do not display in Watson.

## Technical Specifications

<b>HP 8206 zl Switch with Premium Software</b> (J9640A)	<b>Included accessories</b>	1 HPE 8200 zl Management Module (J9092A) 2 HPE 8200 zl Fabric Module (J9093A) 1 HPE 8200 zl System Support Module (J9095A)
	<b>I/O ports and slots</b>	6 open module slots Supports a maximum of 144 autosensing 10/100/1000 ports or 48 10-GbE ports or 144 mini-GBICs, or a combination
	<b>Power supplies</b>	2 power supply slots 1 minimum power supply required (ordered separately)
<b>Physical characteristics</b>	<b>Dimensions</b>	17.42(w) x 17.49(d) x 10.35(h) in (44.25 x 44.42 x 26.29 cm) (6U height)
	<b>Weight</b>	48.1 lb (21.82 kg)
	<b>Memory and processor</b>	
	<b>Gigabit Module</b>	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM
	<b>10G Module</b>	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
	<b>Management Module</b>	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
<b>Mounting and enclosure</b>	Mounts in an EIA-standard 19 in telco rack/equipment cabinet (hardware included); horizontal surface mounting only. An optional 4-post cabinet rail is available (see ordering guide).	
<b>Performance</b>	<b>1000 Mb Latency</b>	< 3.7 $\mu$ s (FIFO 64-byte packets)
	<b>10 Gbps Latency</b>	< 2.1 $\mu$ s (FIFO 64-byte packets)
	<b>Throughput</b>	up to 369.6 Mpps
	<b>Routing/Switching capacity</b>	496.8 Gbps
	<b>Switch fabric speed</b>	561.6 Gbps
	<b>Routing table size</b>	10000 entries (IPv4)
	<b>MAC address table size</b>	64000 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft (3 km)
	<b>Acoustic</b>	Power: 60.0 dB, Pressure: 41.3 dB; ISO 7779, ISO 9296
	<b>Electrical characteristics</b>	Achieved Miercom Certified Green Award

## Technical Specifications

	<b>Frequency</b>	50/60 Hz
	<b>Description</b>	Chassis ships without power supplies. Two power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	<b>Maximum heat dissipation</b>	2450 BTU/hr (2584.75 kJ/hr), (max. non-PoE); 3700 BTU/hr (3903 kJ/hr) (max. PoE)
	<b>AC voltage</b>	100-127/200-240 VAC
<b>Safety</b>		CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825
<b>Emissions</b>		FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
<b>Immunity</b>	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2; 4 kV CD, 8 kV AD
	<b>Radiated</b>	IEC 61000-4-3; 3 V/m
	<b>EFT/Burst</b>	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	<b>Surge</b>	IEC 61000-4-5; 1 kV/2 kV AC
	<b>Conducted</b>	IEC 61000-4-6; 3 V
	<b>Power frequency magnetic field</b>	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	<b>Harmonics</b>	EN 61000-3-2, IEC 61000-3-2
	<b>Flicker</b>	EN 61000-3-3, IEC 61000-3-3
<b>Management</b>		HPE PCM+; HPE PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
<b>Notes</b>		Interface/Service modules, power supplies, and redundant management module must be ordered separately. RS-232C console port via an RJ-45 connector. Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later; for example, J9142B, J8177C).
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> : _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP 8212 zl Switch with Premium Software (J9641A)

<b>Included accessories</b>	1 HPE 8200 zl Management Module (J9092A)
	2 HPE 8200 zl Fabric Module (J9093A)
	1 HPE 8200 zl System Support Module (J9095A)
	1 HPE 8200 zl Switch Premium License (J9474A)

### I/O ports and slots

12 open module slots

Supports a maximum of 288 autosensing 10/100/1000 ports or 96 10-GbE ports or 288 mini-GBICs, or a combination

## Technical Specifications

<b>Power supplies</b>	4 power supply slots 2 minimum power supplies required (ordered separately)	
<b>Physical characteristics</b>	<b>Dimensions</b>	17.5(w) x 18.7(d) x 15.6(h) in (44.45 x 47.5 x 39.62 cm) (9U height)
	<b>Weight</b>	50.44 lb (22.88 kg)
<b>Memory and processor</b>	<b>Gigabit Module</b>	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM
	<b>10G Module</b>	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
	<b>Management Module</b>	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
<b>Mounting and enclosure</b>	Mounts in an EIA-standard 19 in telco rack or equipment cabinet (hardware included); horizontal surface mounting only. An optional 4-post cabinet rail is available (see ordering guide).	
<b>Performance</b>	<b>1000 Mb Latency</b>	< 3.7 $\mu$ s (FIFO 64-byte packets)
	<b>10 Gbps Latency</b>	< 2.1 $\mu$ s (FIFO 64-byte packets)
	<b>Throughput</b>	up to 739 Mpps
	<b>Routing/Switching capacity</b>	993.6 Gbps
	<b>Switch fabric speed</b>	1.1 Tbps
	<b>Routing table size</b>	10000 entries (IPv4)
	<b>MAC address table size</b>	64000 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft (3 km)
	<b>Acoustic</b>	Power: 63.0 dB, Pressure: 47.8 dB; ISO 7779, ISO 9296
<b>Electrical characteristics</b>	Achieved Miercom Certified Green Award	
	<b>Frequency</b>	50/60 Hz
	<b>Description</b>	Chassis ships without power supplies. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	<b>Maximum heat dissipation</b>	4900 BTU/hr (5170 kJ/hr), (max. non-PoE); 7400 BTU/hr (7807 kJ/hr) (max. PoE)
	<b>AC voltage</b>	100-127/200-240 VAC
<b>Safety</b>	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825	

## Technical Specifications

<b>Emissions</b>	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
<b>Immunity</b>	<p><b>EN</b> EN 55024, CISPR 24</p> <p><b>ESD</b> IEC 61000-4-2; 4 kV CD, 8 kV AD</p> <p><b>Radiated</b> IEC 61000-4-3; 3 V/m</p> <p><b>EFT/Burst</b> IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)</p> <p><b>Surge</b> IEC 61000-4-5; 1 kV/2 kV AC</p> <p><b>Conducted</b> IEC 61000-4-6; 3 V</p> <p><b>Power frequency magnetic field</b> IEC 61000-4-8; 1 A/m, 50 or 60 Hz</p> <p><b>Voltage dips and interruptions</b> IEC 61000-4-11; &gt;95% reduction, 0.5 period; 30% reduction, 25 periods</p> <p><b>Harmonics</b> EN 61000-3-2, IEC 61000-3-2</p> <p><b>Flicker</b> EN 61000-3-3, IEC 61000-3-3</p>
<b>Management</b>	HPE PCM+; HPE PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
<b>Notes</b>	Interface/Service modules, power supplies, and redundant management module must be ordered separately. RS-232C console port via an RJ-45 connector. Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later; for example, J9142B, J8177C).
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> : _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP 8206-44G-PoE+-2XG Included accessories v2 zl Switch with Premium Software (J9638A)

	1 HPE 8200 zl Management Module (J9092A)
	2 HPE 8200 zl Fabric Module (J9093A)
	1 HPE 8200 zl System Support Module (J9095A)
	1 HPE 1500W PoE+ zl Power Supply (J9306A)
	1 HPE 24-port Gig-T PoE+ v2 zl Module (J9534A)
	1 HPE 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module (J9536A)
	1 HPE 8200 zl Switch Premium License (J9474A)
<b>I/O ports and slots</b>	44 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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	2 SFP+ 10-GbE ports; Duplex: full only
	4 open module slots
	Supports a maximum of 144 autosensing 10/100/1000 ports or 48 10-GbE ports or 144 mini-GBICs, or a combination

## Technical Specifications

<b>Power supplies</b>	2 power supply slots 1 minimum power supply required includes: 1 x J9306A (HPE 1500W PoE+ zl Power Supply)	
<b>Physical characteristics</b>	<b>Dimensions</b>	17.42(w) x 17.49(d) x 10.35(h) in (44.25 x 44.42 x 26.29 cm) (6U height)
	<b>Weight</b>	61.49 lb (27.89 kg)
<b>Memory and processor</b>	<b>Gigabit Module</b>	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM
	<b>10G Module</b>	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
	<b>Management Module</b>	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
<b>Mounting and enclosure</b>	Mounts in an EIA-standard 19 in telco rack/equipment cabinet (hardware included); horizontal surface mounting only. An optional 4-post cabinet rail is available (see ordering guide).	
<b>Performance</b>	<b>1000 Mb Latency</b>	< 3.7 $\mu$ s (FIFO 64-byte packets)
	<b>10 Gbps Latency</b>	< 2.1 $\mu$ s (FIFO 64-byte packets)
	<b>Throughput</b>	up to 369.6 Mpps
	<b>Routing/Switching capacity</b>	496.8 Gbps
	<b>Switch fabric speed</b>	561.6 Gbps
	<b>Routing table size</b>	10000 entries (IPv4)
	<b>MAC address table size</b>	64000 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft (3 km)
	<b>Acoustic</b>	Power: 60.0 dB, Pressure: 41.3 dB; ISO 7779, ISO 9296
<b>Electrical characteristics</b>	Achieved Miercom Certified Green Award	
	<b>Frequency</b>	50/60 Hz
	<b>Description</b>	Chassis ships without power supplies. Two power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	<b>Maximum heat dissipation</b>	2450 BTU/hr (2584.75 kJ/hr), (max. non-PoE); 3700 BTU/hr (3903 kJ/hr) (max. PoE)
	<b>AC voltage</b>	100-127/200-240 VAC

## Technical Specifications

<b>Safety</b>	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825
<b>Emissions</b>	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
<b>Immunity</b>	<p><b>EN</b> EN 55024, CISPR 24</p> <p><b>ESD</b> IEC 61000-4-2; 4 kV CD, 8 kV AD</p> <p><b>Radiated</b> IEC 61000-4-3; 3 V/m</p> <p><b>EFT/Burst</b> IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)</p> <p><b>Surge</b> IEC 61000-4-5; 1 kV/2 kV AC</p> <p><b>Conducted</b> IEC 61000-4-6; 3 V</p> <p><b>Power frequency magnetic field</b> IEC 61000-4-8; 1 A/m, 50 or 60 Hz</p> <p><b>Voltage dips and interruptions</b> IEC 61000-4-11; &gt;95% reduction, 0.5 period; 30% reduction, 25 periods</p> <p><b>Harmonics</b> EN 61000-3-2, IEC 61000-3-2</p> <p><b>Flicker</b> EN 61000-3-3, IEC 61000-3-3</p>
<b>Management</b>	HPE PCM+; HPE PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
<b>Notes</b>	Interface/Service modules, power supplies, and redundant management module must be ordered separately. RS-232C console port via an RJ-45 connector. Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later; for example, J9142B, J8177C).
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> : _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP 8212-92G-PoE+-2XG Included accessories v2 zl Switch with Premium Software (J9639A)

<b>I/O ports and slots</b>	<p>1 HPE 8200 zl Management Module (J9092A)</p> <p>2 HPE 8200 zl Fabric Module (J9093A)</p> <p>1 HPE 8200 zl System Support Module (J9095A)</p> <p>1 HPE 8200 zl Switch Premium License (J9474A)</p> <p>2 HPE 1500W PoE+ zl Power Supply (J9306A)</p> <p>3 HPE 24-port Gig-T PoE+ v2 zl Module (J9534A)</p> <p>1 HPE 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module (J9536A)</p> <p>92 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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</p> <p>2 SFP+ 10-GbE ports; Duplex: full only</p> <p>8 open module slots</p> <p>Supports a maximum of 288 autosensing 10/100/1000 ports or 96 10-GbE</p>
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## Technical Specifications

		ports or 288 mini-GBICs, or a combination
<b>Power supplies</b>		4 power supply slots 2 minimum power supplies required includes: 2 x J9306A (HPE 1500W PoE+ zl Power Supply)
<b>Physical characteristics</b>	<b>Dimensions</b>	17.5(w) x 18.7(d) x 15.6(h) in (44.45 x 47.5 x 39.62 cm) (9U height)
	<b>Weight</b>	102.76 lb (46.61 kg)
<b>Memory and processor</b>	<b>Gigabit Module</b>	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM
	<b>10G Module</b>	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
	<b>Management Module</b>	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
<b>Mounting and enclosure</b>	Mounts in an EIA-standard 19 in telco rack or equipment cabinet (hardware included); horizontal surface mounting only. An optional 4-post cabinet rail is available (see ordering guide).	
<b>Performance</b>	<b>1000 Mb Latency</b>	< 3.7 $\mu$ s (FIFO 64-byte packets)
	<b>10 Gbps Latency</b>	< 2.1 $\mu$ s (FIFO 64-byte packets)
	<b>Throughput</b>	up to 739 Mpps
	<b>Routing/Switching capacity</b>	993.6 Gbps
	<b>Switch fabric speed</b>	1.1 Tbps
	<b>Routing table size</b>	10000 entries (IPv4)
	<b>MAC address table size</b>	64000 entries
<b>Environment</b>	<b>Operating temperature</b>	32°F to 113°F (0°C to 45°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft (3 km)
	<b>Acoustic</b>	Power: 63.0 dB, Pressure: 47.8 dB; ISO 7779, ISO 9296
<b>Electrical characteristics</b>	Achieved Miercom Certified Green Award	
	<b>Frequency</b>	50/60 Hz
	<b>Description</b>	Chassis ships without power supplies. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	<b>Maximum heat dissipation</b>	4900 BTU/hr (5170 kJ/hr), (max. non-PoE); 7400 BTU/hr (7807 kJ/hr) (max. PoE)

## Technical Specifications

	<b>AC voltage</b>	100-127/200-240 VAC
<b>Safety</b>		CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825
<b>Emissions</b>		FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
<b>Immunity</b>	<b>EN</b>	EN 55024, CISPR 24
	<b>ESD</b>	IEC 61000-4-2; 4 kV CD, 8 kV AD
	<b>Radiated</b>	IEC 61000-4-3; 3 V/m
	<b>EFT/Burst</b>	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
	<b>Surge</b>	IEC 61000-4-5; 1 kV/2 kV AC
	<b>Conducted</b>	IEC 61000-4-6; 3 V
	<b>Power frequency magnetic field</b>	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
	<b>Voltage dips and interruptions</b>	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
	<b>Harmonics</b>	EN 61000-3-2, IEC 61000-3-2
	<b>Flicker</b>	EN 61000-3-3, IEC 61000-3-3
<b>Management</b>		HPE PCM+; HPE PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
<b>Notes</b>		Interface/Service modules, power supplies, and redundant management module must be ordered separately. RS-232C console port via an RJ-45 connector. Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later; for example, J9142B, J8177C).
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> : _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>Standards and protocols</b>	<b>BGP</b>	RFC 1997 BGP Communities Attribute RFC 2918 Route Refresh Capability RFC 4271 A Border Gateway Protocol 4 (BGP-4) RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP) RFC 4724 Graceful Restart Mechanism for BGP RFC 5492 Capabilities Advertisement with BGP-4
(applies to all products in series)		
	<b>Denial of service protection</b>	CPU DoS Protection
	<b>Device management</b>	RFC 1591 DNS (client) HTML and telnet management
	<b>General protocols</b>	IEEE 802.1ad Q-in-Q IEEE 802.1AX-2008 Link Aggregation

## Technical Specifications

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 1918 Address Allocation for Private Internet  
 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  
 RFC 5798 VRRP (exclude Accept Mode and sub-sec timer)  
 UDLD (Uni-directional Link Detection)  
 RFC 3376 IGMPv3 (host joins only)  
 RFC 3973 PIM Dense Mode  
 RFC 4601 PIM Sparse Mode  
 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

### IP multicast

### IPv6

## Technical Specifications

RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)  
 RFC 3019 MLDv1 MIB  
 RFC 3315 DHCPv6 (client and relay)  
 RFC 3484 Default Address Selection for IPv6  
 RFC 3587 IPv6 Global Unicast Address Format  
 RFC 3596 DNS Extension for IPv6  
 RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6  
 RFC 4022 MIB for TCP  
 RFC 4087 IP Tunnel MIB  
 RFC 4113 MIB for UDP  
 RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers  
 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 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 5519 Multicast Group Membership Discovery MIB (MLDv2 only)  
 RFC 5722 Handling of Overlapping IPv6 Fragments  
 IEEE 802.1ap (MSTP and STP MIB's only)  
 RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets  
 RFC 1213 MIB II  
 RFC 1493 Bridge MIB  
 RFC 1724 RIPv2 MIB  
 RFC 1850 OSPFv2 MIB  
 RFC 2021 RMONv2 MIB

### MIBs

## Technical Specifications

	RFC 2096 IP Forwarding Table MIB
	RFC 2578 Structure of Management Information Version 2 (SMIv2)
	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
	RFC 2932 IP (Multicast Routing MIB)
	RFC 2933 IGMP MIB
	RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)
<b>Network management</b>	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
	RFC 5424 Syslog Protocol
	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	SNMPv1/v2c/v3
	XRMON
<b>OSPF</b>	RFC 2328 OSPFv2
	RFC 3101 OSPF NSSA
	RFC 3623 Graceful OSPF Restart (Unplanned Outages only)
	RFC 5340 OSPFv3 for IPv6
<b>QoS/CoS</b>	RFC 2474 DiffServ Precedence, including 8 queues/port
	RFC 2597 DiffServ Assured Forwarding (AF)
	RFC 2598 DiffServ Expedited Forwarding (EF)
<b>Security</b>	IEEE 802.1X Port Based Network Access Control
	RFC 1492 TACACS+
	RFC 2865 RADIUS (client only)
	RFC 2866 RADIUS Accounting
	RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
	Secure Sockets Layer (SSL)
	SSHv2 Secure Shell

## Accessories

### HPE 8200 zl Switch Series accessories

#### Modules

HPE 8-port 10GbE SFP+ v2 zl Module	J9546A
HPE 8-port 10GbE SFP+ v2 zl Module	J9538A
HP 4-port 10GbE CX4 zl Module	J8708A
HP 4-port 10GbE X2 zl Module	J8707A
HP 4-port 10GbE SFP+ zl Module	J9309A
HPE 20-port Gig-T PoE+/2-port 10GbE SFP+ v2 zl Module	J9536A
HPE 20-port Gig-T/2-port 10GbE SFP+ v2 zl Module	J9548A
HPE 20-port Gig-T PoE+/4-port SFP v2 zl Module	J9535A
HPE 20-port Gig-T/4-port SFP v2 zl Module	J9549A
HPE 24-port SFP v2 zl Module	J9537A
HPE 12-port Gig-T PoE+/12-port SFP v2 zl Module	J9637A
HPE 24-port Gig-T PoE+ v2 zl Module	J9534A
HPE 24-port Gig-T v2 zl Module	J9550A
HP 24-port 10/100/1000 PoE zl Module	J8702A
HP 20-port Gig-T / 4-port Mini-GBIC zl Module	J8705A
HP 24-port Mini-GBIC zl Module	J8706A
HPE 24-port 10/100 PoE+ v2 zl Module	J9547A
HP 24-port 10/100 PoE+ zl Module	J9478A
HP 24-port 10/100/1000 PoE+ zl Module	J9307A
HP 20-port 10/100/1000 PoE+ / 4-port Mini-GBIC zl Module	J9308A
HP 8200 zl System Support Module	J9095A
HP 8200 zl Management Module	J9092A
HP 8200 zl Fabric Module	J9093A
HPE Advanced Services v2 zl Module with HDD	J9857A
HPE Advanced Services v2 zl Module with SSD	J9858A

#### Transceivers

<b>HP X131 10G X2 SC ER Transceiver</b>	J8438A
<b>HP X131 10G X2 SC SR Transceiver</b>	J8436A
<b>HP X131 10G X2 CX4 Transceiver</b>	J8440C
HPE X111 100M SFP LC FX Transceiver	J9054C
<b>HP X131 10G X2 SC LR Transceiver</b>	J8437A
<b>HP X131 10G X2 SC LRM Transceiver</b>	J9144A
<b>HP X112 100M SFP LC BX-D Transceiver</b>	J9099B
<b>HP X112 100M SFP LC BX-U Transceiver</b>	J9100B
HPE X132 10G SFP+ LC SR Transceiver	J9150A
HPE X132 10G SFP+ LC LR Transceiver	J9151A
HPE X132 10G SFP+ LC LRM Transceiver	J9152A

## Accessories

HPE X121 1G SFP LC LH Transceiver	J4860C
HPE X121 1G SFP LC SX Transceiver	J4858C
HPE X121 1G SFP LC LX Transceiver	J4859C
HPE X121 1G SFP RJ45 T Transceiver	J8177C
<b>HP X122 1G SFP LC BX-D Transceiver</b>	J9142B
<b>HP X122 1G SFP LC BX-U Transceiver</b>	J9143B
HPE X132 10G SFP+ LC ER Transceiver	J9153A
<b>Cables</b>	
HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
<b>Power Supply</b>	
HPE 1500W PoE+ zl Power Supply	J9306A
HPE 1500W zl Power Supply	J8713A
HPE 875W zl Power Supply	J8712A
<b>License</b>	
<b>HP 8200 zl Switch Premium License</b>	J9474A
<b>WLAN</b>	
HP MSM775 zl Premium Controller Module	J9840A
<b>HP 8206 zl Switch with Premium Software (J9640A)</b>	
HPE 20-port Gig-T/4-port SFP v2 zl Module	J9549A
<b>HP 8206 zl Switch Fan Tray</b>	J9476A
<b>HP 8212 zl Switch with Premium Software (J9641A)</b>	
HP 8212 zl Fan Tray	J9094A

## Accessory Product Details

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

<b>HPE 8-port 10GbE SFP+ v2 zl Module</b> (J9546A)	<b>Ports</b>	8 RJ-45 10-GbE ports; Duplex: full only	
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b>	2.1 lb. (0.95 kg)
		<b>Full configuration weight</b>	2.1 lb. (0.95 kg)
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
	<b>Notes</b>	<b>Fiber type</b>	Single Mode
			Max Distance upto 100m with qualified 10Gbase-T Cat7(Shielded), Cat6a (Shielded/Unshielded) and Cat6 (Shielded, tested to 350Mhz TIA/EIA TSB-155A) cables. Max Distance upto 55m with Cat6 (unshielded, tested to 350Mhz TIA/EIA TSB-155A)
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HPE 8-port 10GbE SFP+ v2 zl Module</b> (J9538A)	<b>Ports</b>	8 open 10-GbE SFP+ transceiver slots	
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b>	2.09 lb (0.95 kg)
		<b>Environment</b>	<b>Operating temperature</b>
	<b>Environment</b>	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
		<b>Notes</b>	
			When mini-GBICs are inserted in any mini-GBIC slot of a J9538A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).



## Accessory Product Details

<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
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<b>HP 4-port 10GbE CX4 zl Module (J8708A)</b>	<b>Ports</b>	4 CX4 10-GbE ports (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full only				
	<b>Physical characteristics</b>	<table> <tr> <td><b>Dimensions</b></td> <td>10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)</td> </tr> <tr> <td><b>Weight</b></td> <td>1.74 lb. (0.79 kg)</td> </tr> </table>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)	<b>Weight</b>	1.74 lb. (0.79 kg)
	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)				
	<b>Weight</b>	1.74 lb. (0.79 kg)				
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 131°F (0°C to 55°C)				
	<b>Cabling</b>	<p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 15 m using CX4 cable</li> <li>• 300 m using optical media converters and multimode fiber cable</li> </ul>				
<b>Notes</b>	<p>Use CX4 10-GbE cable (0.5 m-15 m)</p> <p>No CX4 cables are included with this module.</p>					
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.					

<b>HP 4-port 10GbE X2 zl Module (J8707A)</b>	<b>Ports</b>	4 open 10-GbE X2 transceiver slots				
	<b>Physical characteristics</b>	<table> <tr> <td><b>Dimensions</b></td> <td>10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)</td> </tr> <tr> <td><b>Weight</b></td> <td>1.74 lb. (0.79 kg)</td> </tr> </table>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)	<b>Weight</b>	1.74 lb. (0.79 kg)
	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)				
	<b>Weight</b>	1.74 lb. (0.79 kg)				
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 104°F (0°C to 40°C)				
	<b>Notes</b>	When installed in a zl chassis, the J8707A module limits the operating temperature range of the chassis to 32°F to 104°F (0°C to 40°C).				
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.					

<b>HP 4-port 10GbE SFP+ zl Module (J9309A)</b>	<b>Ports</b>	4 open 10-GbE SFP+ transceiver slots				
	<b>Physical characteristics</b>	<table> <tr> <td><b>Dimensions</b></td> <td>10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)</td> </tr> <tr> <td><b>Weight</b></td> <td>1.64 lb. (0.74 kg)</td> </tr> </table>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)	<b>Weight</b>	1.64 lb. (0.74 kg)
	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)				
	<b>Weight</b>	1.64 lb. (0.74 kg)				
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)			
		<b>Operating relative humidity</b>	15% to 95% @ 113°F (45°C), noncondensing			
<b>Nonoperating/Storage temperature</b>		-40°F to 158°F (-40°C to 70°C)				
	<b>Nonoperating/Storage</b>	15% to 95% @ 158°F (70°C), noncondensing				

## Accessory Product Details

	<b>Notes</b>	<b>relative humidity</b> When installed in a zl chassis, the J9309A module limits the operating temperature range of the chassis to 32F to 113F (0C to 45C).
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE 20-port Gig-T PoE+/2-port 10GbE SFP+ v2 zl Module (J9536A)</b>	<b>Ports</b>	2 open 10-GbE SFP+ transceiver slots 20 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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	<b>Physical characteristics</b>	<b>Dimensions</b> 10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b> 2.1 lb. (0.95 kg)
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 131°F (0°C to 55°C) <b>Operating relative humidity</b> 15% to 95% @ 131°F (55°C), noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 15% to 95% @ 158°F (70°C), noncondensing
	<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;
	<b>Notes</b>	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. When mini-GBICs are inserted in any mini-GBIC slot of a J9308A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE 20-port Gig-T/2-port 10GbE SFP+ v2 zl Module (J9548A)</b>	<b>Ports</b>	2 open 10-GbE SFP+ transceiver slots 20 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); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	<b>Physical characteristics</b>	<b>Dimensions</b> 10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)

## Accessory Product Details

<b>Environment</b>	<b>Weight</b>	2.1 lb. (0.95 kg)
	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;	
<b>Notes</b>	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. When mini-GBICs are inserted in any mini-GBIC slot of a J9308A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HPE 20-port Gig-T PoE+/4-port SFP v2 zl Module (J9535A)</b>	<b>Ports</b>	4 open mini-GBIC (SFP) slots 20 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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only		
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)	
		<b>Weight</b>	2.1 lb. (0.95 kg)	
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)	
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing	
<b>Nonoperating/Storage temperature</b>		-40°F to 158°F (-40°C to 70°C)		
<b>Nonoperating/Storage relative humidity</b>		15% to 95% @ 158°F (70°C), noncondensing		
<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;			
<b>Notes</b>	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.			

## Accessory Product Details

### Services

When mini-GBICs are inserted in any mini-GBIC slot of a J9308A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HPE 20-port Gig-T/4-port SFP v2 zl Module (J9549A)

#### Ports

4 open mini-GBIC (SFP) slots  
20 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); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only

#### Physical characteristics

##### Dimensions

10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)

##### Weight

2.1 lb. (0.95 kg)

#### Environment

##### Operating temperature

32°F to 131°F (0°C to 55°C)

##### Operating relative humidity

15% to 95% @ 131°F (55°C), noncondensing

##### Nonoperating/Storage temperature

-40°F to 158°F (-40°C to 70°C)

##### Nonoperating/Storage relative humidity

15% to 95% @ 158°F (70°C), noncondensing

#### Cabling

Cable type:

1000BASE-T: Category 5 (5E or better recommended), 100  $\Omega$  differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;

#### Notes

When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.

When mini-GBICs are inserted in any mini-GBIC slot of a J9549A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HPE 24-port SFP v2 zl Module (J9537A)

#### Ports

24 open mini-GBIC (SFP) slots

#### Physical characteristics

##### Dimensions

10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)

##### Weight

2.01 lb. (0.91 kg)

#### Notes

When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.

When installed in a zl chassis, the J8706A module limits the operating

## Accessory Product Details

	<b>Services</b>	temperature range of the chassis to 32°F to 104°F (0°C to 40°C). Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE 12-port Gig-T PoE+/12-port SFP v2 zl Module (J9637A)</b>	<b>Ports</b>	12 open mini-GBIC (SFP) slots 12 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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	<b>Physical characteristics</b>	<b>Dimensions</b> 10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b> 2.1 lb. (0.95 kg)
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 131°F (0°C to 55°C) <b>Operating relative humidity</b> 15% to 95% @ 131°F (55°C), noncondensing <b>Nonoperating/Storage temperature</b> -40°F to 158°F (-40°C to 70°C) <b>Nonoperating/Storage relative humidity</b> 15% to 95% @ 158°F (70°C), noncondensing
	<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;
	<b>Notes</b>	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. When mini-GBICs are inserted in any mini-GBIC slot of a J9308A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE 24-port Gig-T PoE+ Ports v2 zl Module (J9534A)</b>		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+); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	<b>Physical characteristics</b>	<b>Dimensions</b> 10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b> 2.0 lb. (0.98 kg)
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 131°F (0°C to 55°C)

## Accessory Product Details

	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (-40°C), noncondensing
<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HPE 24-port Gig-T v2 zl Module (J9550A)</b>	<b>Ports</b>	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); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only	
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b>	2.0 lb. (0.98 kg)
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (-40°C), noncondensing
	<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;	
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HPE 24-port 10/100 PoE+ v2 zl Module (J9547A)</b>	<b>Ports</b>	24 RJ-45 autosensing 10/100 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3at PoE+); Media Type: Auto-MDIX; Duplex: half or full	
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)

## Accessory Product Details

<b>Environment</b>	<b>Weight</b>	2.0 lb. (0.98 kg)
	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
<b>Cabling</b>	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
	Cable type:	100BASE-TX: Category 5 (or better), 100 $\Omega$ differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100BASE-TX;
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

### HP 24-port 10/100 PoE+ Ports zl Module (J9478A)

<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
	<b>Weight</b>	2.0 lb. (0.98 kg)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
<b>Cabling</b>	Cable type: 100BASE-TX: Category 5 (or better), 100 $\Omega$ unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100BASE-TX;	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

### HP 24-port 10/100/1000 Ports PoE+ zl Module (J9307A)

<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
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## Accessory Product Details

<b>Environment</b>	<b>Weight</b>	2.0 lb. (0.98 kg)
	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 149°F (-40°C), noncondensing
<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HP 20-port 10/100/1000 PoE+ / 4-port Mini-GBIC zl Module (J9308A)</b>	<b>Ports</b>	4 open mini-GBIC (SFP) slots 20 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); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only		
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)	
		<b>Weight</b>	2.1 lb. (0.95 kg)	
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)	
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing	
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)	
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing	
	<b>Cabling</b>	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 $\Omega$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;		
	<b>Notes</b>	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required. When mini-GBICs are inserted in any mini-GBIC slot of a J9308A, this limits the operating temperature range of the chassis to 32F to 104F (0C to 40C).		
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response		



## Accessory Product Details

times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HP 8200 zl System Support Module</b> (J9095A)	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.4(h) in. (26.16 x 20.65 x 3.55 cm)
		<b>Weight</b>	1.00 lb. (0.45 kg)
	<b>Environment</b>	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95%, noncondensing
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<b>HP 8200 zl Management Ports Module</b> (J9092A)	1 RJ-45 serial console port		
	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.4(h) in. (26.16 x 20.65 x 3.55 cm)
		<b>Weight</b>	1.20 lb. (0.54 kg)
	<b>Environment</b>	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 95%, noncondensing	
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<b>HP 8200 zl Fabric Module</b> (J9093A)	<b>Physical characteristics</b>	<b>Dimensions</b>	10.3(d) x 8.13(w) x 1.75(h) in. (26.16 x 20.65 x 4.45 cm)
		<b>Weight</b>	1.65 lb. (0.75 kg)
	<b>Environment</b>	<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95%, noncondensing
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

### HP Survivable Branch Communication zl Module powered by Microsoft Lync (J9485A)

**Ports** 1 USB 2.0

## Accessory Product Details

<b>Physical characteristics</b>	<b>Dimensions</b>	9.75(d) x 8.13(w) x 3.5(h) in. (24.77 x 20.65 x 8.89 cm)
	<b>Weight</b>	4.5 lb. (2.04 kg)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 122°F (0°C to 50°C); Important: See note for 50°C temperature spec rules
	<b>Operating relative humidity</b>	15% to 90% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	14°F to 149°F (-10°C to 65°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)

**Notes**

HPE E5400 zl chassis operating temperature specifications when the services module is installed: 45°C when any services module is installed in the right side of the chassis, 50°C when all services modules are installed in the left side of the chassis.

Up to four services modules can be installed in an HPE E5412 zl/E8212 zl Switch chassis simultaneously. Up to two services modules can be installed in an HPE E5406 zl/E8206 zl Switch chassis simultaneously.

When the services module is installed, the maximum relative humidity for the switch drops from 95% to 90%.

**Services**

3-year, 4-hour onsite, 13x5 coverage for hardware (UY932E)  
 3-year, 4-hour onsite, 24x7 coverage for hardware (UY933E)  
 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UY934E)  
 3-year, 24x7 SW phone support, software updates (UY935E)  
 3 Yr 6 hr Call-to-Repair Onsite (UY936E)

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services>: for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP zl f AvayaAura SBC pwrld by AcmePacket (J9486A)

<b>Physical characteristics</b>	<b>Dimensions</b>	9.75(d) x 8.13(w) x 3.5(h) in. (24.77 x 20.65 x 8.89 cm)
	<b>Weight</b>	4.5 lb. (2.04 kg)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 122°F (0°C to 50°C); Important: See note for 50°C temperature spec rules
	<b>Operating relative humidity</b>	15% to 90% @ 104°F (40°C), noncondensing
	<b>Nonoperating/Storage temperature</b>	14°F to 149°F (-10°C to 65°C)
	<b>Nonoperating/Storage relative humidity</b>	15% to 90% @ 149°F (65°C), noncondensing
	<b>Altitude</b>	up to 10,000 ft. (3 km)

**Notes**

HPE E5400zl chassis operating temperature specifications when the services module is installed: 45°C when any services module is installed in the right side of the chassis, 50°C when all services modules are installed in the left side of the chassis.

Up to four services modules can be installed in an HPE E5412zl/E8212zl Switch chassis simultaneously. Up to two services modules can be installed in an HPE E5406zl/E8206zl Switch chassis simultaneously.

## Accessory Product Details

When the services module is installed, the maximum relative humidity for the switch drops from 95% to 90%.

The SBC software and licenses are procured from Avaya or Avaya authorized resellers.

This product does not support Avaya Aura SBC HA functionality.

### Services

3-year, 4-hour onsite, 13x5 coverage for hardware (UY492E)

3-year, 4-hour onsite, 24x7 coverage for hardware (UY493E)

3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UY494E)

3-year, 24x7 SW phone support, software updates (UY496E)

3 Yr 6 hr Call-to-Repair Onsite (UY495E)

Refer to the Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HP X131 10G X2 SC ER Transceiver (J8438A)</b>  HPE X131 10G X2 SC ER Transceiver: An X2 format 10-gigabit transceiver with SC connectors using ER technology.	<b>Ports</b>	1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-ER); Duplex: full only		
	<b>Connectivity</b>	<b>Connector type</b>	SC	
	<b>Physical characteristics</b>	<b>Wavelength</b>	1550 nm	
		<b>Dimensions</b>	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)	
		<b>Weight</b>	0.35 lb. (0.16 kg)	
	<b>Environment</b>	<b>Transceiver form factor</b>	X2	
		<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)	
		<b>Operating relative humidity</b>	15% to 95%, noncondensing	
	<b>Electrical characteristics</b>	<b>Power consumption typical</b>	3 W	
		<b>Power consumption maximum</b>	4.5 W	
	<b>Cabling</b>	Cable type: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;		
		<b>Cable length</b>	2m to 30km (max 40km on engineered links)	
		<b>Fiber type</b>	Single Mode	
	<b>Notes</b>	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.		
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.			

<b>HP X131 10G X2 SC SR Transceiver (J8436A)</b>	<b>Ports</b>	1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-SR); Duplex: full only	
	<b>Connectivity</b>	<b>Connector type</b>	SC
		<b>Wavelength</b>	850 nm

## Accessory Product Details

<p>HPE X131 10G X2 SC SR Transceiver: An X2 format 10-gigabit transceiver with SC connectors using SR technology.</p>	<b>Physical characteristics</b>	<b>Dimensions</b>	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
		<b>Weight</b>	0.35 lb. (0.16 kg)
		<b>Transceiver form factor</b>	X2
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b>	0% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 185°F (-40°C to 85°C)
		<b>Nonoperating/Storage relative humidity</b>	0% to 95%, noncondensing
		<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>Power consumption typical</b>	1.7 W
		<b>Power consumption maximum</b>	2.4 W
	<b>Cabling</b>	Cable type:	
		62.5/125 $\mu\text{m}$ or 50/125 $\mu\text{m}$ (core/cladding) 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:	
	<ul style="list-style-type: none"> <li>• 2-26m with 62.5 <math>\mu\text{m}</math> multimode cable @ 160 MHz*km</li> <li>• 2-33m with 62.5 <math>\mu\text{m}</math> multimode cable @ 200 MHz*km</li> <li>• 2-66m with 50 <math>\mu\text{m}</math> multimode cable @ 400 MHz*km</li> <li>• 2-82m with 50 <math>\mu\text{m}</math> multimode cable @ 500 MHz*km</li> <li>• 2-300m with 50 <math>\mu\text{m}</math> multimode cable @ 2000 MHz*km</li> </ul>		
	<b>Cable length</b>	2-300m	
	<b>Fiber type</b>	Multi Mode	
<b>Notes</b>	For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.		
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<p><b>HP X131 10G X2 CX4 Transceiver</b> (J8440C)</p>	<b>Ports</b>	1 CX4 10-GbE port (IEEE 802.3ak Type 10GBASE-CX4); Duplex: full only	
	<b>Connectivity</b>	<b>Connector type</b> CX4	
<p>HPE X131 10G X2 CX4 Transceiver: An X2 format</p>	<b>Physical characteristics</b>	<b>Dimensions</b>	3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 x 1.35 cm)
		<b>Weight</b>	0.18 lb. (0.08 kg)

## Accessory Product Details

10-gigabit CX4 transceiver.

### Environment

**Operating temperature** 32°F to 131°F (0°C to 55°C)

**Operating relative humidity** 15% to 95% @ 14.9°F (65°C), non-condensing

### Cabling

Maximum distance:

- 15 m using CX4 cables
- 300 m using optical media converters and multimode fiber cable

### Notes

Use CX4 10-GbE cable (0.5-15 m)  
Includes a single 0.5 m cable.

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HPE X111 100M SFP LC Ports

### FX Transceiver (J9054C) Physical characteristics

HPE X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology.

### Environment

1 LC 100BASE-FX port (IEEE 802.3u Type 100BASE-FX); Duplex: half or full

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)

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

Type:

- 62.5/125  $\mu\text{m}$  or 50/125  $\mu\text{m}$  (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 J9054C 100-FX SFP-LC Transceiver" on the "HPE Mini-GBICs and SFPs" Manuals Web page.

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP X131 10G X2 SC LR Ports

1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-LR); Duplex: full only

## Accessory Product Details

<p><b>Transceiver (J8437A)</b></p> <p>An X2 form-factor transceiver that supports the 10-Gigabit LR standard, providing 10-Gigabit connectivity up to 10 km on single-mode fiber.</p>	<b>Connectivity</b>	<b>Connector type</b>	SC
	<b>Physical characteristics</b>	<b>Wavelength</b>	1310 nm
		<b>Dimensions</b>	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
		<b>Weight</b>	0.35 lb. (0.16 kg)
	<b>Environment</b>	<b>Transceiver form factor</b>	X2
		<b>Operating temperature</b>	32°F to 104°F (0°C to 40°C)
		<b>Operating relative humidity</b>	15% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 185°F (-40°C to 85°C)
	<b>Electrical characteristics</b>	<b>Altitude</b>	up to 10,000 ft. (3 km)
		<b>Power consumption typical</b>	2 W
		<b>Power consumption maximum</b>	3 W
	<b>Cabling</b>	Cable type::	
		Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;	
Maximum distance:			
	<ul style="list-style-type: none"> <li>• 10 km</li> </ul>		
	<b>Cable length</b>	2m to 10km with 9/125 μm single-mode cable	
	<b>Fiber type</b>	Single Mode	
<b>Notes</b>	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		
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<p><b>HP X131 10G X2 SC LRM Transceiver (J9144A)</b></p> <p>An X2 form-factor transceiver that supports the 10-Gigabit LRM standard, providing 10-Gigabit connectivity up to 220 m on legacy multimode fiber.</p>	<b>Ports</b>	1 SC 10-GbE port (IEEE 802.3aq Type 10GBASE-LRM); Duplex: full only	
	<b>Physical characteristics</b>	<b>Dimensions</b>	3.54(d) x 1.59(w) x 0.7(h) in. (9.0 x 4.05 x 1.78 cm)
		<b>Weight</b>	0.35 lb. (0.16 kg)
		<b>Transceiver form factor</b>	X2
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b>	0% to 95%, noncondensing
		<b>Nonoperating/Storage</b>	-40°F to 185°F (-40°C to 85°C)

## Accessory Product Details

	<b>temperature</b>	
	<b>Altitude</b>	up to 10,000 ft. (3 km)
<b>Electrical characteristics</b>	<b>Power consumption typical</b>	3.2 W
	<b>Power consumption maximum</b>	4.2 W
<b>Cabling</b>	<p>Cable type: 62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively (a mode conditioning patch cord may be needed in some multimode fiber installations);</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 0.5-220m with 62.5 <math>\mu\text{m}</math> multimode cable @ 160/500 MHz*km</li> <li>• 0.5-220m with 62.5 <math>\mu\text{m}</math> multimode cable @ 200/500 MHz*km</li> <li>• 0.5-100m with 50 <math>\mu\text{m}</math> multimode cable @ 400/400 MHz*km</li> <li>• 0.5-220m with 50 <math>\mu\text{m}</math> multimode cable @ 500/500 MHz*km</li> <li>• 0.5-220m with 50 <math>\mu\text{m}</math> multimode cable @ 1500/500 MHz*km</li> </ul> <p><b>Cable length</b> .5m to 220m</p> <p><b>Fiber type</b> Multi Mode</p>	
<b>Notes</b>	<p>Wavelength: 1310nm</p> <p>For OM3 cable (50 <math>\mu\text{m}</math> 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.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J9144A 10-GbE X2-SC LRM Optic" on the "HPE 10-GbE Transceivers" Manuals Web page.</p> <p>Power Consumption: 4W Max</p>	
<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>	

<b>HP X112 100M SFP LC BX-D Transceiver</b> (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	<b>Ports</b>	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full only
	<b>Physical characteristics</b>	<b>Dimensions</b> 2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
	<b>Environment</b>	<b>Weight</b> 0.04 lb. (0.03 kg)
		<b>Operating temperature</b> 32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b> 0% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C)

## Accessory Product Details

on one strand of singlemode fiber. The J9099B connects to the J9100B "upstream" transceiver, or to any IEEE-standard 100BASE-BX10-U ("upstream") device.

### 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 HPE BX Transceivers" on the "HPE 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 Hewlett Packard Enterprise website at

<http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

## HP 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

32°F to 158°F (0°C to 70°C)

#### Operating relative humidity

0% to 95%, noncondensing

#### Nonoperating/Storage temperature

-40°F to 185°F (-40°C to 85°C)

### 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 HPE BX Transceivers" on the "HPE 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



## Accessory Product Details

		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.
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE X132 10G SFP+ LC SR Transceiver (J9150A)</b>	<b>Ports</b>	1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-SR); Duplex: full only
	<b>Connectivity</b>	<b>Connector type</b> LC
	<b>Physical characteristics</b>	<b>Wavelength</b> 850 nm
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.	<b>Dimensions</b>	2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19 cm)
	<b>Weight</b>	0.04 lb. (0.02 kg)
	<b>Transceiver form factor</b>	SFP+
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b> 0% to 85%, noncondensing
		<b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C)
		<b>Altitude</b> up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>Power consumption typical</b> 0.6 W
		<b>Power consumption maximum</b> 0.8 W
	<b>Cabling</b>	Cable type: 62.5/125 $\mu\text{m}$ or 50/125 $\mu\text{m}$ (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: <ul style="list-style-type: none"> <li>• 2-26m with 62.5 <math>\mu\text{m}</math> multimode cable @ 160 MHz*km</li> <li>• 2-33m with 62.5 <math>\mu\text{m}</math> multimode cable @ 200 MHz*km</li> <li>• 2-66m with 50 <math>\mu\text{m}</math> multimode cable @ 400 MHz*km</li> <li>• 2-82m with 50 <math>\mu\text{m}</math> multimode cable @ 500 MHz*km</li> <li>• 2-300m with 50 <math>\mu\text{m}</math> multimode cable @ 2000 MHz*km</li> </ul>
		<b>Cable length</b> 2-300m
		<b>Fiber type</b> Multi Mode
	<b>Notes</b>	For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at

## Accessory Product Details

<http://www.hpe.com/networking/services>: \_ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HPE X132 10G SFP+ LC LR Transceiver (J9151A)</b>  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.	<b>Ports</b>	1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-LR); Duplex: full only	
	<b>Connectivity</b>	<b>Connector type</b> LC	
	<b>Physical characteristics</b>	<b>Wavelength</b>	1310 nm
		<b>Dimensions</b>	2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19 cm)
		<b>Weight</b>	0.04 lb. (.02 kg)
	<b>Environment</b>	<b>Transceiver form factor</b>	SFP+
		<b>Operating temperature</b>	32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b>	0% to 85%, noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 185°F (-40°C to 85°C)
	<b>Electrical characteristics</b>	<b>Altitude</b>	up to 10,000 ft. (3 km)
		<b>Power consumption typical</b>	0.9 W
		<b>Power consumption maximum</b>	1 W
	<b>Cabling</b>	Cable type: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; Maximum distance: <ul style="list-style-type: none"> <li>• 2m-10km with 9/125 μm single-mode cable</li> </ul>	
<b>Notes</b>	<b>Cable length</b> 2m to 10km <b>Fiber type</b> Single Mode 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.		
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> : _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<b>HPE X132 10G SFP+ LC LRM Transceiver (J9152A)</b>	<b>Ports</b>	1 LC 10-GbE port (IEEE 802.3aq Type 10Gbase-LRM); Duplex: full only
	<b>Connectivity</b>	<b>Connector type</b> LC
	<b>Physical characteristics</b>	<b>Wavelength</b>
<b>Dimensions</b>		2.19(d) x 0.54(w) x 0.47(h) in. (5.57 x 1.38 x 1.19

## Accessory Product Details

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.

<b>Environment</b>	<p><b>Weight</b> 0.04 lb. (0.02 kg)</p> <p><b>Transceiver form factor</b> SFP+</p> <p><b>Operating temperature</b> 32°F to 158°F (0°C to 70°C)</p> <p><b>Operating relative humidity</b> 0% to 85%, noncondensing</p> <p><b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C)</p> <p><b>Altitude</b> up to 10,000 ft. (3 km)</p>
<b>Electrical characteristics</b>	<p><b>Power consumption typical</b> 0.7 W</p> <p><b>Power consumption maximum</b> 1 W</p>
<b>Cabling</b>	<p>Cable type: 62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2</p> <p>Type A1b or A1a, respectively (a mode conditioning patch cord may be needed in some multimode fiber installations);</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 0.5-220m with 62.5 <math>\mu\text{m}</math> multimode cable @ 160/500 MHz*km</li> <li>• 0.5-220m with 62.5 <math>\mu\text{m}</math> multimode cable @ 200/500 MHz*km</li> <li>• 0.5-100m with 50 <math>\mu\text{m}</math> multimode cable @ 400/400 MHz*km</li> <li>• 0.5-220m with 50 <math>\mu\text{m}</math> multimode cable @ 500/500 MHz*km</li> <li>• 0.5-220m with 50 <math>\mu\text{m}</math> multimode cable @ 1500/500 MHz*km</li> </ul> <p><b>Cable length</b> 0.5m to 220m</p> <p><b>Fiber type</b> Multi Mode</p>
<b>Notes</b>	<p>For OM3 cable (50 <math>\mu\text{m}</math> 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.</p> <p>For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended.</p>
<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a>: _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>

### HPE X121 1G SFP LC LH Transceiver (J4860C)

A small form-factor

<b>Ports</b>	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics); Duplex: full only
<b>Physical characteristics</b>	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)

## Accessory Product Details

pluggable (SFP) Gigabit LH transceiver that provides a full-duplex Gigabit solution up to 70 km on single-mode fiber.	<b>Environment</b>	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)
	<b>Cabling</b>	Cable type: <ul style="list-style-type: none"> <li>Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1;</li> </ul> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>10-70,000 m (single-mode fiber)</li> </ul>
	<b>Notes</b>	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.
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HPE X121 1G SFP LC SX Transceiver</b> (J4858C)  A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	<b>Ports</b>	1 LC 1000BASE-SX port; Duplex: full only
	<b>Physical characteristics</b>	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg) Transceiver form factor: SFP
	<b>Environment</b>	Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	<b>Cabling</b>	Type: <ul style="list-style-type: none"> <li>62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;</li> </ul> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>2-220 m (62.5 <math>\mu\text{m}</math> core diameter, 160 MHz*km bandwidth)</li> <li>2-275 m (62.5 <math>\mu\text{m}</math> core diameter, 200 MHz*km bandwidth)</li> <li>2-500 m (50 <math>\mu\text{m}</math> core diameter, 400 MHz*km bandwidth)</li> <li>2-550 m (50 <math>\mu\text{m}</math> core diameter, 500 MHz*km bandwidth)</li> </ul>

## Accessory Product Details

	<b>Services</b>	<p>Cable length: 2-550m</p> <p>Fiber type: Multi Mode</p> <p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>
<p><b>HPE X121 1G SFP LC LX Transceiver</b> (J4859C)</p> <p>HPE X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.</p>	<p><b>Ports</b></p> <p><b>Physical characteristics</b></p> <p><b>Environment</b></p> <p><b>Cabling</b></p>	<p>1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only</p> <p>Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm)</p> <p>Weight: 0.04 lb. (0.02 kg)</p> <p>Operating temperature: 32°F to 158°F (0°C to 70°C)</p> <p>Operating relative humidity: 0% to 85%, noncondensing</p> <p>Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C)</p> <p>Altitude: up to 10,000 ft. (3 km)</p> <p>Type:</p> <ul style="list-style-type: none"> <li>• Either single mode or multimode; 62.5/125 <math>\mu\text{m}</math> or 50/125 <math>\mu\text{m}</math> (core/cladding) diameter, graded-index, low metal content, 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;</li> </ul> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 2-550 m (multimode 62.5 <math>\mu\text{m}</math> core diameter, 500 MHz*km bandwidth)</li> <li>• 2-550 m (multimode 50 <math>\mu\text{m}</math> core diameter, 400 MHz*km bandwidth)</li> <li>• 2-550 m (multimode 50 <math>\mu\text{m}</math> core diameter, 500 MHz*km bandwidth)</li> <li>• 2-10,000 m (single-mode fiber)</li> </ul>
	<b>Notes</b>	<p>A mode conditioning patch cord may be needed in some multimode fiber installations.</p> <p>Wavelength: 1310nm</p> <p>Power Consumption: &lt; 500mW Typical</p>
	<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>
<p><b>HPE X121 1G SFP RJ45 T Transceiver</b> (J8177C)</p> <p>HPE X121 1G SFP RJ45 T</p>	<p><b>Ports</b></p> <p><b>Physical characteristics</b></p>	<p>1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only</p> <p>Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)</p> <p>Weight: 0.06 lb. (0.03 kg)</p>

## Accessory Product Details

<p>Transceiver: An SFP format gigabit transceiver with RJ45 connectors using 1000BaseT technology.</p>	<b>Environment</b>	<p>Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module</p> <p>Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing</p> <p>Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)</p> <p>Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing</p> <p>Altitude: up to 10,000 ft. (3000 km)</p>
	<b>Cabling</b>	<p>Cable type:</p> <p>1000BASE-T: Category 5 (5E or better recommended), 100 Ω differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;</p> <p>Maximum distance:</p> <ul style="list-style-type: none"> <li>• 100 m</li> </ul>
	<b>Notes</b>	<p>Power consumption is nominally 1 watt.</p> <p>For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J8177C 1000Base-T Mini-GBIC" on the "HPE Mini-GBICs and SFPs" Manuals Web page.</p> <p>The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports.</p> <p>The J8177C is capable of 100 Mb operation. This is supported on only the HPE E8200zl, E5400zl, and HPE E6200-24G-mGBIC yl Switches using software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation.</p> <p>Important: The earlier J8177B does not support 100 Mb operation. When used in the Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.</p>
	<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>

### HP X122 1G SFP LC BX-D Ports Transceiver (J9142B)

A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "downstream" transceiver that provides a full-duplex

<b>Physical characteristics</b>	<b>Dimensions</b>	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
	<b>Weight</b>	0.04 lb. (0.02 kg)
<b>Environment</b>	<b>Operating temperature</b>	32°F to 158°F (0°C to 70°C)
	<b>Operating relative humidity</b>	0% to 95%, non-condensing

## Accessory Product Details

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.

### Cabling

**Non-operating/Storage temperature** –40°F to 185°F –40°C to 85°C)

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 HPE BX Transceivers" on the "HPE 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 Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

### HP X122 1G SFP LC BX-U Ports Transceiver (J9143B)

1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only

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.

### 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

32°F to 158°F (0°C to 70°C)

#### Operating relative humidity

0% to 95%, non-condensing

### Cabling

#### Non-operating/Storage temperature

–40°F to 185°F –40°C to 85°C)

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 HPE BX Transceivers" on the "HPE Mini-GBICs and SFPs" Manuals Web page.

The J9143B connects to the J9142B "downstream" transceiver, or to any

## Accessory Product Details

		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.
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.
<b>HPE X132 10G SFP+ LC ER Transceiver (J9153A)</b>	<b>Ports</b>	1 LC 10-GbE port (IEEE 802.3ae Type 10Gbase-ER); Duplex: full only
	<b>Connectivity</b>	<b>Connector type</b> LC
		<b>Wavelength</b> 1550 nm
	<b>Physical characteristics</b>	<b>Dimensions</b> 2.22(d) x 0.55(w) x 0.47(h) in. (5.65 x 1.39 x 1.19 cm)
		<b>Weight</b> .04 lb., Fully loaded
		<b>Transceiver form factor</b> SFP+
	<b>Environment</b>	<b>Operating temperature</b> 32°F to 158°F (0°C to 70°C)
		<b>Operating relative humidity</b> 5% to 95%, noncondensing
		<b>Nonoperating/Storage temperature</b> -40°F to 185°F (-40°C to 85°C)
		<b>Nonoperating/Storage relative humidity</b> 5% to 95%, noncondensing
		<b>Altitude</b> up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>Power consumption typical</b> 1.3 W
		<b>Power consumption maximum</b> 1.5 W
	<b>Cabling</b>	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: <ul style="list-style-type: none"> <li>• 40km</li> </ul>
		<b>Fiber type</b> Single Mode
	<b>Notes</b>	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.
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services:">http://www.hpe.com/networking/services:</a> _ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise



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sales office.

<b>HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B)</b>	<b>Connectivity</b>	Length	3.28 ft. (1 m)
	<b>Physical characteristics</b>	Weight	0.24 lb. (0.11 kg) the cable with an SFP+ transceiver at each end of the cable
		<b>Environment</b>	Operating temperature
	Operating relative humidity		5% to 95%, noncondensing
	Nonoperating/Storage temperature		14°F to 185°F (-10°C to 85°C)
	Nonoperating/Storage relative humidity		5% to 95%, noncondensing
	Altitude		up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Notes	0.04 watts maximum per transceiver end
	<b>Notes</b>	Electrical Properties	<ul style="list-style-type: none"> <li>• Cable Characteristic Impedance: 100 ohms</li> <li>• Crosstalk between pairs: 2% max</li> <li>• Time delay: 1.31 nsec/ft</li> </ul>
		Physical Properties	<ul style="list-style-type: none"> <li>• Cable Diameter: 0.180"</li> <li>• Minimum Cable Bend Radius: 1.0"</li> </ul>
<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.		

<b>HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)</b>	<b>Connectivity</b>	Length	10 ft. (3 m)
	<b>Physical characteristics</b>	Weight	.49 lb. (0.22 kg), Fully loaded the cable with an SFP+ transceiver at each end of the cable
		<b>Environment</b>	Operating temperature
	Operating relative humidity		5% to 95%, noncondensing
	Nonoperating/Storage temperature		14°F to 185°F (-10°C to 85°C)
	Nonoperating/Storage relative humidity		5% to 95%, noncondensing
	Altitude		up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Notes	0.04 watts maximum per transceiver end
	<b>Notes</b>	Electrical Properties	<ul style="list-style-type: none"> <li>• Cable Characteristic Impedance: 100 ohms</li> <li>• Crosstalk between pairs: 2% max</li> <li>• Time delay: 1.31 nsec/ft</li> </ul>

## Accessory Product Details

		Physical Properties	
		<ul style="list-style-type: none"> <li>• Cable Diameter: 0.180"</li> <li>• Minimum Cable Bend Radius: 1.0"</li> </ul>	
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	
<b>HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)</b>	<b>Connectivity</b>	Length	22.97 ft. (7 m)
	<b>Physical characteristics</b>	Weight	1.02 lb., Fully loaded the cable with an SFP+ transceiver at each end of the cable
	<b>Environment</b>	Operating temperature	32°F to 158°F (0°C to 70°C)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	14°F to 185°F (-10°C to 85°C)
		Nonoperating/Storage relative humidity	5% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	Notes	0.04 watts maximum per transceiver end
	<b>Notes</b>	Electrical Properties	
		<ul style="list-style-type: none"> <li>• Cable Characteristic Impedance: 100 ohms</li> <li>• Crosstalk between pairs: 2% max</li> <li>• Time delay: 1.31 nsec/ft</li> </ul>	
		Physical Properties	
		<ul style="list-style-type: none"> <li>• Cable Diameter: 0.180"</li> <li>• Minimum Cable Bend Radius: 1.0"</li> </ul>	
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	
<b>HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300A)</b>	<b>Connectivity</b>	Length	3.28 ft. (1 m)
	<b>Physical characteristics</b>	Weight	.27 lb. (0.12 kg), Fully loaded cable with XFP transceiver on one end and SFP+ on the other end
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	<b>Environment</b>	Operating temperature	32°F to 158°F (0°C to 70°C)
		Operating relative humidity	5% to 95%, noncondensing
		Nonoperating/Storage temperature	32°F to 158°F (0°C to 70°C)
		Nonoperating/Storage	5% to 95%, noncondensing

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connectivity option between switches/servers/storage to interconnect XFP and SFP+ form factors.	<b>Notes</b>	relative humidity	
	<b>Services</b>	Altitude	up to 10,000 ft. (3 km)
		XFP end consumes 2 watts SFP+ end consumes 0.036 watts	
		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable</b> (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.	<b>Connectivity</b>	Length	9.84 ft. (3 m)	
	<b>Physical characteristics</b>	Weight	.51 lb. (0.23 kg), Fully loaded cable with XFP transceiver on one end and SFP+ on the other end	
		<b>Environment</b>	Operating temperature	32°F to 158°F (0°C to 70°C)
	<b>Cabling</b>		Operating relative humidity	5% to 95%, noncondensing
			Nonoperating/Storage temperature	32°F to 158°F (0°C to 70°C)
			Nonoperating/Storage relative humidity	5% to 95%, noncondensing
			Altitude	up to 10,000 ft. (3 km)
	<b>Notes</b>	Maximum distance:		
	<b>Services</b>	<ul style="list-style-type: none"> <li>• 3m Direct Attach Cable</li> </ul>	XFP end consumes 2 watts SFP+ end consumes 0.036 watts	
			Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.	

<b>HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable</b> (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.	<b>Connectivity</b>	Length	16.4 ft. (5 m)	
	<b>Physical characteristics</b>	Weight	.74 lb. (0.34 kg), Fully loaded cable with XFP transceiver on one end and SFP+ on the other end	
		<b>Environment</b>	Operating temperature	32°F to 158°F (0°C to 70°C)
	<b>Cabling</b>		Operating relative humidity	5% to 95%, noncondensing
			Nonoperating/Storage temperature	32°F to 158°F (0°C to 70°C)
			Nonoperating/Storage relative humidity	5% to 95%, noncondensing
			Altitude	up to 10,000 ft. (3 km)
	<b>Notes</b>	XFP end consumes 2 watts SFP+ end consumes 0.036 watts		
	<b>Services</b>	Refer to the Hewlett Packard Enterprise website at		

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factors. [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

**Cable type:**

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

**Maximum distance:**

10Gbps Transfer Rate (Ethernet): 300m

**Notes**

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

**Services**

Refer to the Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

**Cable type:**

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

## Accessory Product Details

### Notes

#### Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

#### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

#### Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

### Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm.

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

### Services

Refer to the Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

#### Cable type:

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

#### Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

### Notes

Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125  $\mu$ m fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50  $\pm$  3.0um Cladding diameter: 125  $\pm$  2.0um Coating diameter: 245  $\pm$  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.

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- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

### Services

Refer to the Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

#### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

#### Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

### Notes

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter: 50  $\pm$  3.0 $\mu\text{m}$  Cladding diameter: 125  $\pm$  2.0 $\mu\text{m}$  Coating diameter: 245  $\pm$  10 $\mu\text{m}$
- 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 50/125 $\mu\text{m}$  multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

### Services

Refer to the Hewlett Packard Enterprise website at [http://www.hpe.com/networking/services\\_](http://www.hpe.com/networking/services_) for details on the service-level

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descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

### Notes

#### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

#### Maximum distance:

10Gbps Transfer Rate (Ethernet): 300m

Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125  $\mu\text{m}$  fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.

- Dimensions: Core diameter:  $50 \pm 3.0\mu\text{m}$  Cladding diameter:  $125 \pm 2.0\mu\text{m}$  Coating diameter:  $245 \pm 10\mu\text{m}$
- 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 50/125 $\mu\text{m}$  multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION:
- Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic.
- Jacket Color: Aqua for OM3 multimode per TIA 598
- Boot Color: White
- Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters.
- Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46.
- Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services>: \_ for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

#### Cable type:

50/125  $\mu\text{m}$  (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;

#### Maximum distance:



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### Notes

10Gbps Transfer Rate (Ethernet): 300m

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

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

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

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### Services

- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

## Accessory Product Details

### Services

- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
- Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

## Accessory Product Details

### Services

- Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
- Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

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

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

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

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HPE 1500 W PoE+ zl Power Supply (J9306A)</b>	<b>Physical characteristics</b>	<b>Dimensions</b>	6.05(d) x 7.45(w) x 5.1(h) in. (15.37 x 18.92 x 12.95 cm)
		<b>Weight</b>	7.5 lb. (3.2 kg)
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
		<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>AC voltage</b>	110-127/200-240 VAC
		<b>Current</b>	13/10 A
		<b>Maximum power rating</b>	1768 W

## Accessory Product Details

	<b>Frequency</b>	50/60 Hz
	<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The Maximum Power Rating at 120 volts is 1114 watts and at 240 volts is 1768 watts.
<b>Notes</b>		Each J9306A supplies 600 W chassis power, 300 W of PoE/PoE+ power at 110-127 volts, and 900 W of PoE/PoE+ power at 200-240 volts. One J9306A can power the J8697A chassis. One J9306A can power the J9477A chassis. Two J9306A supplies are required to power the J8698A chassis. Two J9306A supplies are required to power the J8715A chassis.
<b>Services</b>		Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services">http://www.hpe.com/networking/services</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HPE 1500W zl Power Supply</b> (J8713A)	<b>Physical characteristics</b>	<b>Dimensions</b>	6.05(d) x 7.45(w) x 5.1(h) in. (15.37 x 18.92 x 12.95 cm)
		<b>Weight</b>	7.5 lb. (3.2 kg)
		<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
	<b>Environment</b>	<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
		<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>AC voltage</b>	200-240 VAC
		<b>Current</b>	10 A
		<b>Maximum power rating</b>	1800 W
<b>Frequency</b>		50/60 Hz	
<b>Notes</b>		Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	
<b>Notes</b>		200–240 V only. Installation of the J8713A reduces the chassis altitude specification to 10,000 ft. (3677m). • J8713A supplies 600 W chassis power and 900 W PoE power.	

## Accessory Product Details

See the Ordering Guide for more details on power supply selection for PoE power.

Units shipped to North America include a NEMA L6-20P twist lock power cord. Non-locking NEMA 6-20P optionally available - see the Ordering Guide for more details.

When used in the J8714A power shelf, the following specs apply (at full load):

- Heat dissipation: 450 BTU/hr (475 kJ/hr) @ 220V
- Maximum current: 5.1 A @ 220 V

### Services

Refer to the Hewlett Packard Enterprise website at <http://www.hpe.com/networking/services> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.

<b>HPE 875W zl Power Supply</b> (J8712A)	<b>Physical characteristics</b>	<b>Dimensions</b>	6.05(d) x 7.45(w) x 5.1(h) in. (15.37 x 18.92 x 12.95 cm)
		<b>Weight</b>	7.05 lb. (3.2 kg)
		<b>Environment</b>	
	<b>Environment</b>	<b>Operating temperature</b>	32°F to 131°F (0°C to 55°C)
		<b>Operating relative humidity</b>	15% to 95% @ 131°F (55°C), noncondensing
		<b>Nonoperating/Storage temperature</b>	-40°F to 158°F (-40°C to 70°C)
		<b>Nonoperating/Storage relative humidity</b>	15% to 95% @ 158°F (70°C), noncondensing
		<b>Altitude</b>	up to 10,000 ft. (3 km)
	<b>Electrical characteristics</b>	<b>AC voltage</b>	100-127/200-240 VAC
		<b>Current</b>	12/5.7 A
		<b>Maximum power rating</b>	1050 W
		<b>Frequency</b>	50/60 Hz
		<b>Notes</b>	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
<b>Notes</b>	<p>J8712A supplies 600 W chassis power and 273 W PoE power.          One J8712A can power the J8697A chassis.          Two J8712A supplies are required to power the J8698A chassis.          Two J8712A supplies are required to power the J8715A chassis.          See the Ordering Guide for more details on power supply selection for PoE power.          When used in the J8714A power shelf, the following specs apply (at full load):</p> <ul style="list-style-type: none"> <li>• Heat dissipation: 250 BTU/hr (263 kJ/hr) @ 110 V, 210 BTU/hr (222 kJ/hr) @ 220 V</li> </ul>		

## Accessory Product Details

	<b>Services</b>	<ul style="list-style-type: none"> <li>• Maximum current: 3.2 A @ 110 V, 1.7 A @ 220 V</li> </ul> <p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>	
<b>HP 8200 zl Switch Premium License</b> (J9474A)	<b>Services</b>	<p>3-Year, 9x5 SW phone support, software updates (UT481E)  3-year, 24x7 SW phone support, software updates (UT482E)  4-year, 24x7 SW phone support, software updates (UT458E)  5-year, 24x7 SW phone support, software updates (UT459E)  1-year, 24x7 software phone support, software updates (HS532E)</p> <p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>	
<b>HP 8206 zl Switch Fan Tray</b> (J9476A)	<b>Physical characteristics</b>	<b>Dimensions</b>	18.23(d) x 1.96(w) x 10.15(h) in. (46.3 x 4.98 x 25.78 cm) (6U height)
		<b>Weight</b>	3.46 lb. (1.57 kg)
	<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>	
<b>HP 8212 zl Fan Tray</b> (J9094A)	<b>Physical characteristics</b>	<b>Dimensions</b>	5(d) x 5(w) x 5(h) in. (12.7 x 12.7 x 12.7 cm)
	<b>Services</b>	<p>Refer to the Hewlett Packard Enterprise website at <a href="http://www.hpe.com/networking/services_">http://www.hpe.com/networking/services_</a> for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local Hewlett Packard Enterprise sales office.</p>	

## Summary of Changes

Date	Version History	Action	Description of Change
27-May-2016	From Version 40 to 41	Changed	Product description updated.
01-Nov-2014	From Version 39 to 40	Change	Features and Warranty and support updated
09-Oct-2014	From Version 38 to 39	Changed	Accessory Product Details revised, SKU descriptions updated
17-Feb-2014	From Version 37 to 38	Changed	Transceivers were revised.
09-Dec-2013	From Version 36 to 37	Changed	Standard Switch Chassis, Box Level Integration CTO Models, Rack Level Integration CTO Models, Internal Power Supplies, Modules, and Cables were revised.
15-Oct-2013	From Version 35 to 36	Changed	Configuration was revised.
03-Oct-2013	From Version 34 to 35	Changed	Overview image callouts were realigned.
30-Sep-2013	From Version 33 to 34	Changed	Updated the Configuration section.
		Removed	Removed one EOL Accessory.
20-Sep-2013	From Version 32 to 33	Added	4 new images were added.
19-Aug-2013	From Version 31 to 32	Changed	Box Level Integration CTO Models in Configuration.
18-Jul-2013	From Version 30 to 31	Removed	Removed two EOL Accessories (Threat Management).
10-Jun-2013	From Version 29 to 30	Added	OM4 cables were added.
30-May-2013	From Version 28 to 29	Changed	Updated the Configuration section.
14-May-2013	From Version 27 to 28	Changed	Updated the Configuration section.
19-Mar-2013	From Version 26 to 27	Changed	Updated the new Configuration section.
27-Feb-2013	From Version 25 to 26	Changed	Updated the formatting of the new Configuration section.
19-Feb-2013	From Version 24 to 25	Added	Added the Configuration section.
24-Sep-2012	From Version 23 to 24	Changed	Features and Benefits was revised, as were Accessories and the model specifications.
06-Sep-2012	From Version 22 to 23	Changed	Updated a typographical error in the Features and Benefits section.
27-Aug-2012	From Version 21 to 22	Changed	Updated the specifications for the HPE 8-port 10 GbE SFP+ v2 zl Module in Accessory Product Details.
25-Jun-2012	From Version 20 to 21	Changed	Features and Benefits was revised, as were Accessories and the model specifications.
27-Mar-2012	From Version 19 to 20	Added	HPE X242 SFP+ to SFP+ 10m Direct Attach Copper Cable and HPE X242 SFP+ to SFP+ 15m Direct Attach Copper



## Summary of Changes

			Cable were added.
26-Sep-2011	From Version 18 to 19	Changed	Accessories was revised.
05-Sep-2011	From Version 17 to 18	Added	Accessory Product Details was added.
20-Jun-2011	From Version 15 to 17	Changed	Features and Benefits was revised.
15-Apr-2011	From Version 14 to 15	Removed	Removed the remaining mentions of ProCurve from the QS.
16-Nov-2010	From Version 13 to 14	Changed	The QuickSpecs was completely revised, including adding several new models.
15-Sep-2010	From Version 11 to 13	Changed	The QuickSpecs was completely revised, including changing the title.
02-Jun-2010	From Version 10 to 11	Changed	Updated the Notes section of Technical Specifications.  Updated Standards and Protocols  Added new cables to the Accessories section.
28-Oct-2009	From Version 9 to 10	Changed	Updated the Standards and Protocols in Specifications.  Updated the Introduction and Features and Benefits section.
03-Sep-2009	From Version 8 to 9	Changed	Updated the Standards and Protocols in Specifications.  Updated the Transceivers section of Accessories
01-Sep-2009	From Version 7 to 8	Added	All mentions of the HPE ProCurve 8206zl Switch.
		Changed	Updates were made throughout the QuickSpecs. Note the title has changed.
01-Jul-2009	From Version 6 to 7	Changed	The Accessories section was revised as was the Notes section of Technical Specifications.
11-Jun-2009	From Version 5 to 6	Added	Added several new services.
		Changed	The Features and Benefits and the notes in the Technical Specifications section were revised.
28-Apr-2009	From Version 4 to 5	Added	Added several products to the Accessories section.
19-Jan-2009	From Version 3 to 4	Changed	Updated Features and Benefits and Services in the Overview section and Included Accessories, Management and Standards and Protocols in the Technical Specifications section, as well completely revising the Accessories section.
18-Dec-2007	From Version 2 to 3	Added	The line art image was added.
30-Oct-2007	From Version 1 to 2	Changed	The Model part number was corrected.

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## Summary of Changes



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