

HP 8200 zl Switch Series



Product overview

The HP 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 HP 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 a Limited Lifetime Warranty 2.0—making it a compelling switching solution.

A summary of the highlights of the 8200 zl Switch Series:

- Core, distribution, mission-critical access layer
- Advanced high-availability switches
- Integration with HP 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

Unified Wired and Wireless

- **NEW** HTTP redirect function

Supports HP 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 L2, L3, and L4 information; and applies QoS policies such as setting the priority level and rate limiting to selected traffic on a per-port or per-VLAN basis

- L4 prioritization

Enables prioritization based on TCP/UDP port numbers

- Traffic prioritization

Allows real-time traffic classification into eight priority levels that are mapped to eight queues

- Bandwidth shaping

– Port-based rate limiting

Enabled per-port ingress/egress-enforced bandwidth increase

– 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 bandwidth reduction

- Class of service (CoS)

Sets the IEEE 802.1p priority tag based on the IP address, IP type of service (ToS), L3 protocol, TCP/UDP port number, source port, and DiffServ

AllianceOne integration

- HP AllianceONE Services zl Module

Allows applications to be embedded 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 AllianceONE solution, visit the HP website)

Management

- Remote intelligent mirroring

Mirrors selected ingress/egress traffic based on an ACL, port, MAC address, or VLAN to a local or remote HP 8200 zl, 6600, 6200 yl, 5400 zl, or 3500 switch anywhere on the network

- Remote monitoring (RMON), Extended 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

- Unidirectional link detection (UDLD)

Monitors the 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 helps prevent network problems such as loops

- Command authorization

Leverages the RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents the activity

- Friendly port names

Allows assignment of descriptive names to ports

- Dual flash images

Provides independent primary and secondary operating system files for backup while upgrading

- Multiple configuration files

Are easily stored with a flash image

- HP unified core-to-edge features

Enables faster solution deployment with implementation of features that are common across the ProVision portfolio

- Comware CLI

- Comware-compatible CLI

Bridges the experience of HP Comware CLI users who use the ProVision software CLI

- Display and fundamental Comware CLI commands

Are embedded in the switch CLI as native commands; display output is formatted as on Comware-based switches and fundamental commands provide a Comware-familiar initial switch setup

- Configuration Comware CLI commands

Elicit CLI help to formulate the correct ProVision software CLI command

Connectivity

- High-density port connectivity

Provides up to 12 interface-module slots and up to 288 wire-speed 10/100/1000 PoE-enabled ports or 96 10GbE 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 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 PoE+

Provides up to 30 W per port to IEEE 802.3at-complaint PoE/PoE+-powered devices such as video IP phones, IEEE 802.11n wireless access points, and advanced pan/zoom/tilt security cameras

- Jumbo frames

Allow high-performance remote backup and disaster-recovery services on GbE and 10GbE ports

- HP unified core-to-edge hardware

Enables sparing simplicity with the interface and service modules, Gigabit optics/10 GbE transceivers, and power supplies common across the ProVision family

- Pre-standard PoE support

Detects and provides power to pre-standard PoE devices (refer to the list of supported devices in the product FAQs, which can be accessed at hp.com/networking)

- Auto-MDIX

Provides automatic adjustments 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

- Dual stack (IPv4 and IPv6)

Provides the transition mechanism from IPv4 to IPv6; and supports 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 open standard path first (OSPF) v3 routing protocols

- 6-in-4 tunneling

Supports encapsulation of IPv6 traffic in IPv4 packets

- Security

Provides RA guard, DHCPv6 protection, dynamic IPv6 lockdown

Performance

- High-speed, high-capacity architecture

Provides intra-module and inter-module switching with 739.2 million pps throughput on the purpose-built ProVision ASICs, using a 1.12 Tb/s crossbar switching fabric

- Selectable queue configurations

Enables increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications

- Scalable system design

Provides built-in performance capacity/headroom to support next-generation high-density/high-speed connectivity with its efficient chassis architecture/backplane

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 for 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 a failover from an active to a standby management module

- Nonstop routing

Enhances L3 high availability; OSPFv2/v3 and VRRP continue to operate and route network traffic during a 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 STP; and allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing

- Multiple spanning tree protocol (STP) and IEEE 802.1s

Offers high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1d STP and IEEE 802.1w Rapid STP

- IEEE 802.3ad link-aggregation-control protocol (LACP) and HP port trunking

Support up to 144 trunks, each with up to eight links (ports) per trunk

- Proven ProVision ASIC and system architecture

Reduces technology risk and provides reliable support and flexibility—with the architecture leveraged from the successful HP 5400 zl, 3500, 6600, and 6200 yl Switch Series

- HP zl family components
Employ proven intelligent edge switch interface modules, optics, and power supplies to reduce technology risk and enhance system reliability
- Hot-swappable modules
Enables the interface, management, and fabric modules as well as mini-GBIC optics and power supplies to be removed, swapped, or added to the system—without interrupting ongoing switch operations
- Redundant fan design and hot-swappable fan tray
Provide continuity of operation in case of a single fan failure
- Passive chassis backplane
Provides system reliability and reduces the impact of a component failure (no traffic-forwarding active components)
- SmartLink
Provides easy-to-configure link redundancy of active and standby links

L2 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; and connects multiple LANs on a high-speed campus or metro network
- MAC-based VLAN
Provides granular control and security; and uses the 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+
- HP switch meshing
Enables dynamic load balancing across multiple active redundant links to increase the aggregate bandwidth availability; and allows concurrent L3 routing with v2 modules

L3 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 helps prevent server spoofing for UDP services such as DHCP

- Loopback interface address

Defines an address in the routing information protocol (RIP) and OSPF, improving the diagnostic capability

- Route maps

Provide more control during route redistribution; and allow filtering and altering of route metrics

- **NEW** DHCP server

Centralizes and reduces the cost of IPv4 address management

L3 routing

- Static IP routing

Provides manually configured routing for both IPv4 and IPv6 networks

- RIP

Includes 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 the policy set by the network administrator (requires v2 modules)

- IPv4 border gateway routing protocol

Is scalable, robust, and flexible

Security

- 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

Enables authentication of multiple IEEE 802.1X users per port

– Web-based authentication

Authenticates from the Web browser for clients that do not support the IEEE 802.1X supplicant

– MAC-based authentication

Provides client authentication with a RADIUS server, based on the client's MAC authentication

– Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port

Allows a switch port to accept 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 helps entirely prevent the virus from spreading across the routed VLANs or bridged interfaces without requiring external appliances
- DHCP protection
Blocks DHCP packets from unauthorized DHCP servers, mitigating denial-of-service attacks
- Secure management access
Delivers secure encryption of all access methods (CLI, GUI, and 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 bridge protocol data units (BPDUs) port protection
Blocks BPDUs on ports that do not require BPDUs, mitigating forged BPDU attacks
- Dynamic IP lockdown
Works with DHCP protection to block traffic from unauthorized hosts, mitigating IP source address spoofing
- Dynamic ARP protection
Blocks ARP broadcasts from unauthorized hosts, helping prevent eavesdropping or theft of network data
- Detection of malicious attacks
Monitors 10 types of network traffic; and sends a warning when an anomaly that can be potentially 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
Helps prevent certain 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 (SSH)
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; and protects against unwanted file downloads or unauthorized copying of a switch configuration file
- Switch management logon security
Helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
- 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 system (IDS)/intrusion prevention system (IPS), and VPN concentrator (via the HP 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)
Helps prevent flooding of IP multicast traffic
- LLDP-media endpoint discovery (MED)
Defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- PoE allocations
Supports multiple methods—automatic, IEEE 802.3af class, LLDP-MED, or user specified—to allocate PoE power for more efficient energy use

- 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 a locally configured profile that can be a list of MAC prefixes

Flexibility

- Unified wired and wireless deployment and management
 - Employs the HP MSM765zl Mobility Controller and offers secure, advanced wireless services with simplified management as well as 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
 - Enables the seamless addition of new QoS and security features over time—without costly hardware upgrades

Warranty and support

- Limited Lifetime warranty 2.0
 - Advance hardware replacement with next-business-day delivery (available in most countries). See hp.com/networking/warrantysummary for duration details
- Electronic and telephone support (for Limited Lifetime Warranty 2.0)
 - Limited 24x7 telephone support is available from HP for the first 3 years; limited electronic and business hours telephone support is available from HP for the entire warranty period; to reach our support centers, refer to hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to hp.com/networking/warrantysummary
- Software releases
 - To find software for your product, visit hp.com/networking/support; for details on the software releases available with your product purchase, visit hp.com/networking/warrantysummary

HP 8200 zL Switch Series

Specifications



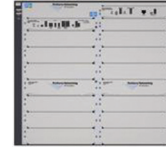
	HP 8206 zL Switch with Premium Software (J9640A)	HP 8212 zL Switch with Premium Software (J9641A)
Included accessories	1 HP 8200 zL Management Module (J9092A) 2 HP 8200 zL Fabric Module (J9093A) 1 HP 8200 zL System Support Module (J9095A)	1 HP 8200 zL Management Module (J9092A) 2 HP 8200 zL Fabric Module (J9093A) 1 HP 8200 zL System Support Module (J9095A) 1 HP 8200 zL Switch Premium License (J9474A)
Ports	6 open module slots Supports a maximum of 144 autosensing 10/100/1000 ports or 48 10GbE ports or 144 mini-GBICs, or a combination	12 open module slots Supports a maximum of 288 autosensing 10/100/1000 ports or 96 10GbE ports or 288 mini-GBICs, or a combination
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)	4 power supply slots 2 minimum power supplies required (ordered separately)
Physical characteristics	17.42(w) x 17.49(d) x 10.35(h) in (44.25 x 44.42 x 26.29 cm) (6U height) 48.1 lb (21.82 kg)	17.5(w) x 18.7(d) x 15.6(h) in (44.45 x 47.5 x 39.62 cm) (9U height) 50.44 lb (22.88 kg)
Memory and processor	Gigabit module 10G module Management module	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM

	HP 8206 zl Switch with Premium Software (J9640A)	HP 8212 zl Switch with Premium Software (J9641A)
Mounting	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).	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).
Performance		
1000 Mb Latency	< 3.7 μ s (FIFO 64-byte packets)	< 3.7 μ s (FIFO 64-byte packets)
10 Gb/s Latency	< 2.1 μ s (FIFO 64-byte packets)	< 2.1 μ s (FIFO 64-byte packets)
Throughput	369.6 million pps	up to 739 million pps
Routing/Switching capacity	496.8 Gb/s	993.6 Gb/s
Switch fabric speed	561.6 Gb/s	1.1 Tb/s
Routing table size	10000 entries (IPv4)	10000 entries (IPv4)
MAC address table size	64000 entries	64000 entries
Environment		
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	15% to 95% @ 131°F (55°C), noncondensing	15% to 95% @ 131°F (55°C), noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	15% to 95% @ 149°F (65°C), noncondensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustic	Power: 60.0 dB, Pressure: 41.3 dB; ISO 7779, ISO 9296	Power: 63.0 dB, Pressure: 47.8 dB; ISO 7779, ISO 9296
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Description	Achieved Miercom Certified Green Award Achieved Chassis ships without power supplies. Two power supply slots are available; three different power supplies are available. See power supply products for additional specifications.	Achieved Miercom Certified Green Award Achieved Chassis ships without power supplies. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
Maximum heat dissipation	2450 BTU/hr (2584.75 kJ/hr), (max. non-PoE); 3700 BTU/hr (3903 kJ/hr) (max. PoE)	4900 BTU/hr (5170 kJ/hr), (max. non-PoE); 7400 BTU/hr (7807 kJ/hr) (max. PoE)
	Notes Power supplies must be ordered separately. A minimum of one J8712A, J8713A, or J9306A supply is required to power the system.	Power supplies must be ordered separately. A minimum of two J8712A, J8713A, or J9306A supplies are required to power the system.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825

	HP 8206 zl Switch with Premium Software (J9640A)	HP 8212 zl Switch with Premium Software (J9641A)
Emissions	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity	EN 55024, CISPR 24 EN IEC 61000-4-2; 4 kV CD, 8 kV AD ESD IEC 61000-4-3; 3 V/m Radiated IEC 61000-4-3; 3 V/m EFT/Burst IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line) Surge IEC 61000-4-5; 1 kV/2 kV AC Conducted IEC 61000-4-6; 3 V Power frequency magnetic field IEC 61000-4-8; 1 A/m, 50 or 60 Hz Voltage dips and interruptions IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods Harmonics EN 61000-3-2, IEC 61000-3-2 Flicker EN 61000-3-3, IEC 61000-3-3	EN 55024, CISPR 24 EN IEC 61000-4-2; 4 kV CD, 8 kV AD ESD IEC 61000-4-3; 3 V/m Radiated IEC 61000-4-3; 3 V/m EFT/Burst IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line) Surge IEC 61000-4-5; 1 kV/2 kV AC Conducted IEC 61000-4-6; 3 V Power frequency magnetic field IEC 61000-4-8; 1 A/m, 50 or 60 Hz Voltage dips and interruptions IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods Harmonics EN 61000-3-2, IEC 61000-3-2 Flicker EN 61000-3-3, IEC 61000-3-3
Management	IMC—Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	IMC—Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes	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).	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).
Services	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 8200 zL Switch Series

Specifications (continued)



	HP 8206-44G-PoE+-2XG v2 zL Switch with Premium Software (J9638A)	HP 8212-92G-PoE+-2XG v2 zL Switch with Premium Software (J9639A)
Included accessories	1 HP 8200 zL Management Module (J9092A) 2 HP 8200 zL Fabric Module (J9093A) 1 HP 8200 zL System Support Module (J9095A) 1 HP 1500W PoE+ zL Power Supply (J9306A) 1 HP 24-port Gig-T PoE+ v2 zL Module (J9534A) 1 HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zL Module (J9536A) 1 HP 8200 zL Switch Premium License (J9474A)	1 HP 8200 zL Management Module (J9092A) 2 HP 8200 zL Fabric Module (J9093A) 1 HP 8200 zL System Support Module (J9095A) 1 HP 8200 zL Switch Premium License (J9474A) 2 HP 1500W PoE+ zL Power Supply (J9306A) 3 HP 24-port Gig-T PoE+ v2 zL Module (J9534A) 1 HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zL Module (J9536A)
Ports	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+ 10GbE ports; Duplex: full only 4 open module slots Supports a maximum of 144 autosensing 10/100/1000 ports or 48 10GbE ports or 144 mini-GBICs, or a combination	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 2 SFP+ 10GbE ports; Duplex: full only 8 open module slots Supports a maximum of 288 autosensing 10/100/1000 ports or 96 10GbE ports or 288 mini-GBICs, or a combination
Power supplies	2 power supply slots 1 minimum power supply required includes: 1 x J9306A (HP 1500W PoE+ zL Power Supply)	4 power supply slots 2 minimum power supplies required includes: 2 x J9306A (HP 1500W PoE+ zL Power Supply)
Physical characteristics		
Weight	17.42(w) x 17.49(d) x 10.35(h) in (44.25 x 44.42 x 26.29 cm) (6U height) 61.49 lb (27.89 kg)	17.5(w) x 18.7(d) x 15.6(h) in (44.45 x 47.5 x 39.62 cm) (9U height) 102.76 lb (46.61 kg)
Memory and processor		
Gigabit module	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM	ARM9 @ 200 MHz; packet buffer size: 144 Mb QDR SDRAM
10G module	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
Management module	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	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).	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).

	HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software (J9638A)	HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software (J9639A)
Performance		
1000 Mb Latency	< 3.7 μ s (FIFO 64-byte packets)	< 3.7 μ s (FIFO 64-byte packets)
10 Gb/s Latency	< 2.1 μ s (FIFO 64-byte packets)	< 2.1 μ s (FIFO 64-byte packets)
Throughput	up to 369.6 million pps	up to 739 million pps
Routing/Switching capacity	496.8 Gb/s	993.6 Gb/s
Switch fabric speed	561.6 Gb/s	1.1 Tb/s
Routing table size	10000 entries (IPv4)	10000 entries (IPv4),
MAC address table size	64000 entries	64000 entries
Environment		
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	15% to 95% @ 131°F (55°C), noncondensing	15% to 95% @ 131°F (55°C), noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	15% to 95% @ 149°F (65°C), noncondensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustic	Power: 60.0 dB, Pressure: 41.3 dB; ISO 7779, ISO 9296	Power: 63.0 dB, Pressure: 47.8 dB; ISO 7779, ISO 9296
Electrical characteristics		
Frequency	Achieved Miercom Certified Green Award 50/60 Hz	Achieved Miercom Certified Green Award 50/60 Hz
Description	Chassis ships without power supplies. Two power supply slots are available; three different power supplies are available. See power supply products for additional specifications.	Chassis ships without power supplies. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
Maximum heat dissipation	2450 BTU/hr (2584.75 kJ/hr), (max. non-PoE); 3700 BTU/hr (3903 kJ/hr) (max. PoE)	4900 BTU/hr (5170 kJ/hr), (max. non-PoE); 7400 BTU/hr (7807 kJ/hr) (max. PoE)
Voltage	100-127/200-240 VAC	100-127/200-240 VAC
Notes		
	Power supplies must be ordered separately. A minimum of one J8712A, J8713A, or J9306A supply is required to power the system.	Power supplies must be ordered separately. A minimum of two J8712A, J8713A, or J9306A supplies are required to power the system.
Safety		
	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950; IEC 60825

	HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software (J9638A)	HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software (J9639A)
Emissions	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; FCC part 15 Class A; ICE-003, Canadian Radio Interface Regulation; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity		
EN	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Management	IMC—Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	IMC—Intelligent Management Center; command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes	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).	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).
Services	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Standards and Protocols

(applies to all products in series)

BGP	RFC 1997 BGP Communities Attribute RFC 2918 Route Refresh Capability RFC 4456 BGP Route Reflection: An Alternative to Full RFC 4271 A Border Gateway Protocol 4 (BGP-4) Mesh Internal BGP (IBGP) RFC 4724 Graceful Restart Mechanism for BGP
------------	--

Denial of service protection	CPU DoS Protection
-------------------------------------	--------------------

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

General protocols	IEEE 802.1ad Q-in-Q IEEE 802.3x Flow Control IEEE 802.1AX-2008 Link Aggregation 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 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)
--------------------------	--

IP multicast	RFC 3376 IGMPv3 (host joins only) RFC 3973 PIM Dense Mode
---------------------	---

IPv6

RFC 1981 IPv6 Path MTU Discovery
 RFC 3596 DNS Extension for IPv6
 RFC 4293 MIB for IP
 RFC 2375 IPv6 Multicast Address Assignments
 RFC 3810 Multicast Listener Discovery Version 2
 RFC 4294 IPv6 Node Requirements
 RFC 2460 IPv6 Specification
 RFC 2464 Transmission of IPv6 over Ethernet Networks
 RFC 2710 Multicast Listener Discovery (MLD) for IPv6
 RFC 2925 Definitions of Managed Objects for Remote (MLDv2) for IPv6
 RFC 4022 MIB for TCP
 RFC 4087 IP Tunnel MIB
 RFC 4113 MIB for UDP
 RFC 4419 Key Exchange for SSH
 RFC 4443 ICMPv6
 RFC 4541 IGMP & MLD Snooping Switch
 RFC 4861 IPv6 Neighbor Discovery Ping, Traceroute, and Lookup Operations (Ping only)
 RFC 4213 Basic Transition Mechanisms for IPv6 Hosts
 RFC 4862 IPv6 Stateless Address Auto-configuration
 RFC 3019 MLDv1 MIB
 RFC 3315 DHCPv6 (client and relay)
 RFC 3484 Default Address Selection for IPv6
 RFC 3587 IPv6 Global Unicast Address Format 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 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)

MIBs

IEEE 802.1ap (MSTP and STP MIB's only)
 RFC 1155 Structure & ID of Mgmt Info for TCP/IP Internets
 RFC 2021 RMONv2 MIB
 RFC 2668 802.3 MAU MIB
 RFC 1213 MIB II
 RFC 2096 IP Forwarding Table MIB
 RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
 RFC 1493 Bridge MIB
 RFC 2578 Structure of Management Information Version 2 (SMIv2)
 RFC 2613 SMON MIB
 RFC 2737 Entity MIB (Version 2)
 RFC 1724 RIPv2 MIB
 RFC 2618 RADIUS Client MIB
 RFC 2787 VRRP MIB
 RFC 1850 OSPFv2 MIB
 RFC 2620 RADIUS Accounting MIB
 RFC 2863 The Interfaces Group MIB
 RFC 2665 Ethernet-Like-MIB RFC 2925 Ping MIB
 RFC 2932 IP (Multicast Routing MIB)
 RFC 4836 Managed Objects for 802.3 Medium Attachment Units (MAU)

Network management

IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
 RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events)
 ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
 RFC 3176 sFlow
 RFC 5424 Syslog Protocol
 SNMPv1/v2c/v3
 XRMON

OSPF

RFC 2328 OSPFv2
 RFC 3101 OSPF NSSA
 RFC 3623 Graceful OSPF Restart (Unplanned Outages only)
 RFC 5340 OSPFv3 for IPv6

QoS/CoS	RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF)
Security	IEEE 802.1X Port Based Network Access Control RFC 2865 RADIUS (client only) RFC 3579 RADIUS Support For Extensible Authentication RFC 1492 TACACS+ RFC 2866 RADIUS Accounting Protocol (EAP) Secure Sockets Layer (SSL) SSHv2 Secure Shell

HP 5400 zl Switch Series accessories

Modules	<p>HP 8-port 10GBASE-T v2 zl Module (J9546A) HP 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) HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module (J9536A) HP 20-port Gig-T / 2-port 10GbE SFP+ v2 zl Module (J9548A) HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module (J9535A) HP 20-port Gig-T / 4-port SFP v2 zl Module (J9549A) HP 24-port SFP v2 zl Module (J9537A) HP 12-port Gig-T PoE+ / 12-port SFP v2 zl Module (J9637A) HP 24-port Gig-T PoE+ v2 zl Module (J9534A) HP 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) HP 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) HP Survivable Branch Communication zl Module powered by Microsoft® Lync (J9485A) HP Services zl Module for Avaya Aura Session Border Controller powered by Acme Packet (J9486A) NEW HP Advanced Services v2 zl Module with HDD (J9857A) HP Advanced Services v2 zl Module with SSD (J9858A)</p>
----------------	--

Transceivers	<p>HP X131 10G X2 SC ER Transceiver (J8438A) HP X131 10G X2 SC SR Transceiver (J8436A) HP X131 10G X2 CX4 Transceiver (J8440C) HP X111 100M SFP LC FX Transceiver (J9054C) HP X131 10G X2 SC LR Transceiver (J8437A) HP X131 10G X2 SC LRM Transceiver (J9144A) HP X112 100M SFP LC BX-D Transceiver (J9099B) HP X112 100M SFP LC BX-U Transceiver (J9100B) HP X132 10G SFP+ LC SR Transceiver (J9150A) HP X132 10G SFP+ LC LR Transceiver (J9151A) HP X132 10G SFP+ LC LRM Transceiver (J9152A) HP X121 1G SFP LC LH Transceiver (J4860C) HP X121 1G SFP LC SX Transceiver (J4858C) HP X121 1G SFP LC LX Transceiver (J4859C) HP X121 1G SFP RJ45 T Transceiver (J8177C) HP X122 1G SFP LC BX-D Transceiver (J9142B) HP X122 1G SFP LC BX-U Transceiver (J9143B) HP X132 10G SFP+ LC ER Transceiver (J9153A)</p>
---------------------	--

Cables	<p>HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B)</p> <p>HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)</p> <p>HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)</p> <p>HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300A)</p> <p>HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9301A)</p> <p>HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable (J9302A)</p> <p>HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)</p> <p>HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)</p> <p>HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)</p> <p>HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)</p> <p>HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)</p> <p>HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)</p> <p>HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)</p> <p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)</p> <p>HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable (J9286B)</p> <p>HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable (J9287B)</p>
Power Supply	<p>HP 1500W PoE+ zl Power Supply (J9306A)</p> <p>HP 1500W zl Power Supply (J8713A)</p> <p>HP 875W zl Power Supply (J8712A)</p>
License	HP 8200 zl Switch Premium License (J9474A)
WLAN	NEW HP MSM775 zl Premium Controller Module (J9840A)
HP 8206 zl Switch with Premium Software (J9640A)	<p>HP 20-port Gig-T / 4-port SFP v2 zl Module (J9549A)</p> <p>HP 8206 zl Switch Fan Tray (J9476A)</p>
HP 8212 zl Switch with Premium Software (J9641A)	HP 8212 zl Fan Tray (J9094A)
HP 8206-44G-PoE+-2XG v2 zl Switch with Premium Software (J9638A)	<p>HP 20-port Gig-T / 4-port SFP v2 zl Module (J9549A)</p> <p>HP 8206 zl Switch Fan Tray (J9476A)</p>
HP 8212-92G-PoE+-2XG v2 zl Switch with Premium Software (J9639A)	HP 8212 zl Fan Tray (J9094A)

Learn more at
hp.com/networking

Sign up for updates
hp.com/go/getupdated



Share with colleagues



Rate this document

© Copyright 2009-2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft is a U.S. registered trademark of Microsoft Corporation.

4AA2-7811ENW, December 2014, Rev. 11

