QuickSpecs

Overview

Models

HP 5406R zl2 Switch	J9821A
HP 5412R zl2 Switch	J9822A
HP 5406R-44G-PoE+/2SFP+ (No PSU) v2 zl2 Switch	J9823A
HP 5412R-92G-PoE+/2SFP+ (No PSU) v2 zl2 Switch	J9825A
HP 5406R-44G-PoE+/4SFP (No PSU) v2 zl2 Switch	J9824A
HP 5412R-92G-PoE+/4SFP (No PSU) v2 zl2 Switch	J9826A
HP 5406R-8XGT/8SFP+ (No PSU) v2 zl2 Switch	J9868A

Key Features

- Advanced access layer, distribution, and core
- Integrated L2 to L4 intelligent edge feature set
- Enterprise-class resiliency with hitless failover and power supply redundancy
- HP AllianceOne integrated
- Scalable 10/100/1000 and 10GbE connectivity with full PoE+ provisioning

Product overview

The HP 5400R zl2 Switch Series consists of advanced intelligent switches in the HP modular chassis product line, which includes 6 slot and 12-slot chassis and associated modules and bundles. The foundation for the switch series is a purpose-built, programmable ProVision ASIC that allows the most demanding networking features, such as Quality of Service (QoS) and security, to be implemented in a scalable yet granular fashion. With 10/100, Gigabit Ethernet, and 10 Gigabit Ethernet interfaces; choice of PoE+ and non-PoE; integrated Layer 3 features; and HP AllianceOne solutions, the 5400R zl2 switch series offers excellent investment protection, flexibility, and scalability, as well as ease of deployment, operation, and maintenance.

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

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

Overview

number, source port, and DiffServ

Management

- **Remote intelligent mirroring**
  mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote HP 8200 zl, 6600, 6200 yl, 5400 zl, 5400R, 3500, or 3800 Switch located 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
- **Management simplicity**
  provides common software features and CLI implementation across all HP ProVision-based switches (including the zl and yl switches)
- **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
- **Multiple configuration files**
  stores easily to the flash image
- **Comware CLI**
  - **Comware-compatible CLI**
    bridges the experience of HP Comware CLI users who are using the HP ProVision software CLI
  - **Display and fundamental Comware CLI commands**
    are embedded in the switch CLI as native commands; display output formatted as on Comware-based switches; fundamental commands provide a 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

- **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, for up to 288 ports simultaneously, for PoE- and PoE+-powered devices, such as video IP phones, IEEE 802.11n wireless access points, and advanced pan/zoom/tilt security cameras
- **Prestandard PoE support**
  detects and provides power to prestandard PoE devices; see the list of supported devices in the product FAQ at:
  www.hp.com/networking
- **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 10-GbE ports per system
- **Jumbo frames**
  on Gigabit Ethernet and 10-Gigabit Ethernet ports, jumbo frames allow high-performance remote backup and disaster-recovery services
- **Auto-MDIX**
  provides automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

Overview

- **IPv6**
  - **IPv6 host**
    enables switches to be managed in an IPv6 network
  - **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

Performance

- **High-speed, high-capacity architecture**
  2 Tbps crossbar switching fabric provides intra-module and inter-module switching with 785.7 million pps throughput on the purpose-built 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

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 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
- **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 HP port trunking**
  support up to 144 trunks, each with up to eight links (ports) per trunk
- **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
- **Optional redundant power supply**
  provides uninterrupted power and allows hot-swapping of the redundant power supplies when installed
- **Hot-swappable modules**
  allows dissimilar modules, and power supplies in a redundant power supply configuration to be added or swapped without interrupting the network
- **Sparing simplicity**
  HP zl-common accessories (interface modules and power supplies)
- **Uplink Failure Detection**
  provides active-standby network path redundancy for servers that are configured for active-standby NIC teaming
- **NEW SmartLink**
  provides easy-to-configure link redundancy of active and standby links

Layer 2 switching

- **VLAN support and tagging**

Overview

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+
- **HP switch meshing**
  dynamically load balances across multiple active redundant links to increase available aggregate bandwidth; allows concurrent Layer 3 routing with v2 modules

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

Layer 3 routing

- **Static IP routing**
  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 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 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**
    client is authenticated with the RADIUS server based on the client's MAC address
  - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**
    switch 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

Overview

- **DHCP protection**
  blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Secure management access**
  delivers secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **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
- **STP Root Guard**
  protects the root bridge from malicious attacks or configuration mistakes
- **Detection of malicious attacks**
  monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- **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
- **Management Interface Wizard**
  helps secure management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB at the desired level
- **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

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
    -

Overview

> 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

Warranty and support

- **Lifetime Warranty 2.0**
  advance hardware replacement for as long as you own the product with next-business-day delivery (available in most countries)†
- **Electronic and telephone support (for 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 www.hp.com/networking/contact-support; for details on the duration of support provided with your product purchase, refer to www.hp.com/networking/warrantysummary
- **Software releases**
  to find software for your product, refer to www.hp.com/networking/support; for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

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

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.

HP 5406 zl Switch with Premium Software   J9642A
- 1 Power Supply required   See
- 4U - Height   Configuration
    Note:4

HP 5406R zl2 Switch   J9821A
- 1 Power Supply required
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406-44G-PoE+-2XG v2 zl Swch w Pm SW   J9533A
- 44 autosensing 10/100/1000 port   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included (min=0 \ max=2   Note:1, 5, 9
  SFP+ Transceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 4U - Height

PDU CABLE NA/MEX/TW/JP   J9533A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   J9533A#B2C
- C15 PDU Jumper Cord (ROW)C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power CordHigh Volt Switch to Wall Power Cord   J9533A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5406 8p10GT 8p10GE Swch and Psw   J9866A
- 8 RJ-45 10GbE ports   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included   Note:1, 3, 5, 9
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 4U - Height

PDU CABLE NA/MEX/TW/JP   J9866A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   J9866A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9866A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5406R-8XGT/8SFP+ v2 zl2 Swch   J9868A
- 1 Power Supply required   See
- 8 RJ-45 10GbE ports   Configuration

Configuration

- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

Note:1

HP 5406R-Gig-T-PoE+/SFP+ v2 zl2 Swch

- 1 Power Supply required
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 SFP+ Transceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

J9823A
See Configuration Note:1

HP 5406R-Gig-T-PoE+/SFP v2 zl2 Swch

- 1 Power Supply required
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Transceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

J9824A
See Configuration Note:2

HP 5406-44G-PoE+-4G v2 zl Swch w Prm SW

- 44 autosensing 10/100/1000 port
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included
- 1 - J9535A HP 20-port GT PoE+/4-port SFP v2 zl Mod included (min=0 \ max=4 SFP Transceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 4U - Height

J9539A
See Configuration Note:2, 5, 9

PDU CABLE NA/MEX/TW/JP

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

J9539A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9539A#B2C

High Volt Switch to Wall Power Cord

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

J9539A#B2E

HP 5406 8p10GT 8p10GE Swch and Psw

- 8 RJ-45 10GbE ports
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 4U - Height

J9866A
See Configuration Note:1, 5, 9

PDU CABLE NA/MEX/TW/JP

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

J9866A#B2B

PDU CABLE ROW

J9866A#B2C

Configuration

- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9866A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5412 zl Switch with Premium Software   J9643A
- 2 Power Supplies required
- 7U - Height

See Configuration Note:4

HP 5412R zl2 Switch   J9822A
- 2 Power Supplies required
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 7U - Height

HP 5412-92G-PoE+-2XG v2 zl Swch w Pm SW   J9532A
- 92 autosensing 10/100/1000 port
- 2 - J9306A HP 1500 W PoE+ zl Power Supply included
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 SFP+ Transceivers)
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 7U - Height

See Configuration Note:1, 5, 9

PDU CABLE NA/MEX/TW/JP   J9532A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   J9532A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9532A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5412-92G-PoE+-4G v2 zl Swch w Prm SW   J9540A
- 92 autosensing 10/100/1000 port
- 2 - J9306A HP 1500 W PoE+ zl Power Supply included
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Transceivers)
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 7U - Height

See Configuration Note:2, 5, 9

PDU CABLE NA/MEX/TW/JP   J9540A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   J9540A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9540A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5412R-Gig-T-PoE+/SFP+ v2 zl2 Swch   J9825A
- 2 Power Supplies required

See

Configuration

- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 SFP+ Transceivers)
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 7U - Height

Configuration Note:1

HP 5412R zl2 Switch

- 2 Power Supplies required
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Transceivers)
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 7U - Height

J9822A

See Configuration Note:2

Configuration Rules:

Note 1	The following Transceivers install into this Chassis :	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X132 10G SFP+ LC ER Transceiver	J9153A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP 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	The following Transceivers install into this switch:	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X111 100M SFP LC FX Transceiver	J9054C

Note 4	If Switch is ordered in a Rack, Then #B2B, or #B2C is defaulted on the Power Supply's. (Optional when Switch is not Racked. See Drop down remark in "Power Supplies" section.)

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)

Note 9   Localization required on orders without #B2B, #B2C, #B2D or #B2E options.

Box Level Integration CTO Models

CTO Solution Sku

HP 54xx CTO Switch Solution	J9809A
• SSP trigger sku	See Configuration Note:7

CTO Switch Chassis

HP 5406 zl Switch with Premium Software   J9642A
- 1 Power Supply required   See
- 4U - Height   Configuration Note:4, 10

HP 5406R zl2 Switch   J9821A
- 1 Power Supply required   See
- 1 Fan Tray Included   Configuration
- 1 Management module included   Note:10
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406-44G-PoE+-2XG v2 zl Swch w Pm SW   J9533A
- 44 autosensing 10/100/1000 port   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included (min=0 \ max=2   Note:1 , 4, 8, 10, SFP+ Transceivers)   12
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 4U - Height

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)

HP 5406-44G-PoE+-4G v2 zl Swch w Prm SW   J9539A
- 44 autosensing 10/100/1000 port   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9535A HP 20-port GT PoE+/4-port SFP v2 zl Mod included (min=0 \ max=4 SFP Transceivers) Note: 2, 4, 8, 10,
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included   12
- 4U - Height

Configuration

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)

HP 5406 8p10GT 8p10GE Swch and Psw J9866A
- 8 RJ-45 10GbE ports See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included Configuration
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included Note:1, 4, 8, 10,
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers) 12
- 4U - Height

PDU CABLE NA/MEX/TW/JP J9866A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW J9866A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord J9866A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5406R-8XGT/8SFP+ v2 zl2 Swch J9868A
- 1 Power Supply required See
- 8 RJ-45 10GbE ports Configuration
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included Note:1, 10
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406R-Gig-T-PoE+/SFP+ v2 zl2 Swch J9823A
- 1 Power Supply required See
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 Configuration
  SFP+ Transceivers) Note:1, 10
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406R-Gig-T-PoE+/SFP v2 zl2 Swch J9824A
- 1 Power Supply required See
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Configuration
  Transceivers) Note:2, 10
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

Configuration

HP 5412 zl Switch with Premium Software   J9643A
- 2 Power Supplies required   See
- 7U - Height   Configuration
                                                                          Note:4

HP 5412R zl2 Switch   J9822A
- 2 Power Supplies required   See
- 1 Fan Tray Included   Configuration
- 1 Management module included   Note:10
- 1 RJ-45 out-of-band management port
- 7U - Height

HP 5412-92G-PoE+-2XG v2 zl Swch w Pm SW   J9532A
- 92 autosensing 10/100/1000 port   See
- 2 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2   Note:1, 4, 8, 10,
  SFP+ Transceivers)   12
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 7U - Height

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)

HP 5412-92G-PoE+-4G v2 zl Swch w Prm SW   J9540A
- 92 autosensing 10/100/1000 port   See
- 2 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP   Note:2, 4, 8, 10,
  Transceivers)   12
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 7U - Height

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)

HP 5412R-Gig-T-PoE+/SFP+ v2 zl2 Swch   J9825A
- 2 Power Supplies required   See
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2   Configuration
  SFP+ Transceivers)   Note:1, 10
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included

Configuration

- 1 RJ-45 out-of-band management port
- 7U - Height

HP 5412R-Gig-T-PoE+/SFP v2 zl2 Swch	J9826A

- 2 Power Supplies required
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Transceivers)
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 7U - Height

See Configuration Note:2, 10

Configuration Rules:

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

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 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   The following Transceivers install into this Chassis : (Use #0D1 if switch is CTO) - if applicable

HP X121 1G SFP LC SX Transceiver	J4858C
HP X121 1G SFP LC LX Transceiver	J4859C
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP RJ45 T Transceiver	J8177C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143B
HP X111 100M SFP LC FX Transceiver	J9054C

Note 4   Localization required on orders without #B2B, #B2C, #B2D or #B2E options.

Note 8   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)

Configuration

Note 10   If the Switch Chassis is to be Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the J9809A - HP 5400 CTO Enablement. (Min 1/Max 1 Switch per SSP)

Note 12   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.

Rack Level Integration CTO Models

CTO Switch Chassis

HP 5406 zl Switch with Premium Software   J9642A
- 1 Power Supply required   See
- 4U - Height   Configuration
                                                                                                                                 Note:11

HP 5406R zl2 Switch   J9821A
- 1 Power Supply required   See
- 1 Fan Tray Included   Configuration
- 1 Management module included   Note:11
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406-44G-PoE+-2XG v2 zl Swch w Pm SW   J9533A
- 44 autosensing 10/100/1000 port   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included (min=0 \ max=2   Note:1, 4, 11
  SFP+ ransceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 4U - Height

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)

HP 5406-44G-PoE+-4G v2 zl Swch w Prm SW   J9539A
- 44 autosensing 10/100/1000 port   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9535A HP 20-port GT PoE+/4-port SFP v2 zl Mod included (min=0 \ max=4 SFP Transceivers)   Note:2, 4, 11
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 4U - Height

PDU CABLE NA/MEX/TW/JP   #B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   #B2C
- C15 PDU Jumper Cord (ROW)

Configuration

High Volt Switch to Wall Power Cord   **#B2E**
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5406 8p10GT 8p10GE Swch and Psw   **J9866A**
- 8 RJ-45 10GbE ports   See
- 1 - J9306A HP 1500 W PoE+ zl Power Supply included   Configuration
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included   Note:1, 4, 11
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 4U - Height

PDU CABLE NA/MEX/TW/JP   **J9866A#B2B**
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW   **J9866A#B2C**
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   **J9866A#B2E**
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5406R-8XGT/8SFP+ v2 zl2 Swch   **J9868A**
- 1 Power Supply required   See
- 8 RJ-45 10GbE ports   Configuration
- 1 - J9546A HP 8-port 10GBASE-T v2 zl Module included   Note:1, 11
- 1 - J9538A HP 8-port 10GbE SFP+ v2 zl Module included (min=0 \ max=8 SFP+ Transceivers)
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406R-Gig-T-PoE+/SFP+ v2 zl2 Swch   **J9823A**
- 1 Power Supply required   See
- 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2   Configuration
  SFP+ Transceivers)   Note:1, 11
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5406R-Gig-T-PoE+/SFP v2 zl2 Swch   **J9824A**
- 1 Power Supply required   Configuration
- 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP   Note:2, 11
  Transceivers)
- 1 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 4U - Height

HP 5412 zl Switch with Premium Software   **J9643A**
- 2 Power Supplies required   See
- 7U - Height   Configuration
    Note:11

Configuration

HP 5412R zl2 Switch	J9822A
• 2 Power Supplies required	See
• 1 Fan Tray Included	Configuration
• 1 Management module included	Note:11
• 1 RJ-45 out-of-band management port	
• 7U - Height	

HP 5412-92G-PoE+-2XG v2 zl Swch w Pm SW	J9532A
• 92 autosensing 10/100/1000 port	See
• 2 - J9306A HP 1500 W PoE+ zl Power Supply included	Configuration
• 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 SFP+ Transceivers)	Note:1, 4, 11
• 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included	
• 7U - Height	

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)	

HP 5412-92G-PoE+-4G v2 zl Swch w Prm SW	J9540A
• 92 autosensing 10/100/1000 port	See
• 2 - J9306A HP 1500 W PoE+ zl Power Supply included	Configuration
• 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP Transceivers)	Note:2, 4, 5, 8
• 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included	
• 7U - Height	

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)	

HP 5412R-Gig-T-PoE+/SFP+ v2 zl2 Swch	J9825A
• 2 Power Supplies required	See
• 1 - J9536A HP 20-port Gig-T PoE+ / 2-port 10-GbE SFP+ v2 zl Module included(min=0 \ max=2 SFP+ Transceivers)	Configuration
• 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included	Note:1,11
• 1 Fan Tray Included	
• 1 Management module included	
• 1 RJ-45 out-of-band management port	
• 7U - Height	

HP 5412R-Gig-T-PoE+/SFP v2 zl2 Swch	J9826A
• 2 Power Supplies required	See
• 1 - J9535A HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module included (min=0 \ max=4 SFP	Configuration

Configuration

Transceivers)   Note:2,11
- 3 - J9534A HP 24-port Gig-T PoE+ v2 zl Module included
- 1 Fan Tray Included
- 1 Management module included
- 1 RJ-45 out-of-band management port
- 7U - Height

Configuration Rules:

Note 1	The following Transceivers install into this Chassis : (Use #0D1 or #B01 if switch is CTO) - if applicable	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X132 10G SFP+ LC ER Transceiver	J9153A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP 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	The following Transceivers install into this Chassis : (Use #0D1 if switch is CTO) - if applicable	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X111 100M SFP LC FX Transceiver	J9054C

Note 4	Localization required on orders without #B2B, #B2C, #B2D or #B2E options.

Note 6	If the CTO Base Model is ordered #0D1, Then #B2B, or #B2C is Required on the Power Supply's. (Optional when Switch is not Factory Racked. See Drop down remark in "Power Supplies" section.)

Note 11	If the CTO Switch Chassis needs to be racked, Then the CTO Base Model needs to integrate (with #0D1) to the HP Rack.

Internal Power Supplies

Configuration

J9642Ax System (std 0 // max 2) User Selection (min 1 / max 2)

J9533Ax, J9866A and J9539Ax System (std 1 // max 2) User Selection (min 0 / max 1)

J9643Ax System (std 0 // max 4) User Selection (min 2 / max 4)

J9532Ax and J9540x System (std 2 // max 4) User Selection (min 0 / max 2)

(J9821A, J9868A, J9823A, J9824A) System (std 0 // max 2) User Selection (min 1 / max 2)

(J9821A, J9868A, J9823A, J9824A) System (std 0 // max 2) User Selection (min 1 / max 2)

HP 1500 W PoE+ zl Power Supply — J9306A
- C15 Outlet — See Configuration Note:1, 2, 6

PDU CABLE NA/MEX/TW/JP — J9306A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU CABLE ROW — J9306A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord — J9306A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 875W zl Power Supply — J8712A
- C15 Outlet — See Configuration Note:1, 2, 5, 6

PDU CABLE NA/MEX/TW/JP — J8712A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

High Volt Switch to Wall Power Cord — J8712A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 1500 W zl 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)

HP 5400R 700W PoE+ zl2 Power Supply — J9828A
- includes 1 x c13, 700w — See Configuration Note:2, 4, 6, 7

Configuration

PDU Cable NA/MEX/TW/JP   J9828A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW   J9828A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9828A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5400R 1100W PoE+ zl2 Power Supply   J9829A
- includes 1 x c15, 1100W   See
                                                                                                 Configuration
                                                                                                 Note:2, 4, 6, 7

PDU Cable NA/MEX/TW/JP   J9829A#B2B
- C15 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW   J9829A#B2C
- C15 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9829A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

HP 5400R 2750W PoE+ zl2 Power Supply   J9830A
- includes 1 x c19, 2750w   See
                                                                                                 Configuration
                                                                                                 Note:2, 4, 6, 7

PDU Cable NA/MEX/TW/JP   J9830A#B2B
- C19 PDU Jumper Cord (NA/MEX/TW/JP)

PDU Cable ROW   J9830A#B2C
- C19 PDU Jumper Cord (ROW)

High Volt Switch to Wall Power Cord   J9830A#B2E
- NEMA L6-20P Cord (NA/MEX/JP/TW)

Configuration Rules:

Note 1   Power Supplies cannot be mixed for a switch enclosure

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

Note 3   This power supply is not supported on the J9821A, J9868A, J9823A, J9824A, J9822A, J9825A and
                J9826A switches.

Note 4   This power supply is ONLY supported on the J9821A, J9868A, J9823A, J9824A, J9822A, J9825A and
                J9826A switches.

Note 5   This power supply is not supported on the J9533Ax, J9539Ax, J9532Ax, J9866A and J9540x switches.

Configuration

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

Note 7   Power Supplies can be mixed for a switch enclosure

Remarks: If Power Supply is added to switch with power supply, then Switch and Power Supply localization must
match.

For J9828A, J9829A, J9830A: Power Supplies can be mixed for a switch enclosure. However, the three
different power supplies each require different power cords, and the wall plug that is needed for J9830A is
different from the wall plug that is needed for J9828A and J9829A. Moreover, full redundancy and N+1
redundancy are only supported with like power supplies.

"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)"

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built.

Modules

Management Modules

(J9821A, J9868A, J9823A, J9824A, J9822A, J9825A, J9826A) System (std 1 // max 2) User Selection
(min 0 / max 1)

HP 5400R zl2 Management Module   J9827A

I/O Modules

J9642x only - System (std 0 // max=6) User Selection (min 0 / max=6) per Chassis

J9821A only - System (std 0 // max=6) User Selection (min 0 / max=6) per Chassis

J9643x only - System (std 0 // max=12) User Selection (min 0 / max=12) per Chassis

J9822A only - System (std 0 // max=12) User Selection (min 0 / max=12) per Chassis

J9533x, J9539x, J8699x, J9447x, J9866A only - System (std 2 // max=6) User Selection (min 0 / max=4)
per Chassis

J9868A, J9823A, J9824A only - System (std 2 // max=6) User Selection (min 0 / max=4) per Chassis

J9532A, J9540A only - System (std 4 // max=12) User Selection (min 0 / max=8) per Chassis

J9825A, J9826A only - System (std 4 // max=12) User Selection (min 0 / max=8) per Chassis

Configuration

HP 20-port GT PoE+/4-port SFP v2 zl Mod
- min=0 \ max=4 SFP Transceivers

J9535A
See Configuration Note:1

HP 24-port SFP v2 zl Module
- min=0 \ max=24 SFP Transceivers

J9537A
See Configuration Note:1

HP 12p Gig-T PoE+/12p SFP v2 zl Mod
- min=0 \ max=12 SFP Transceivers

J9637A
See Configuration Note:1

HP 20-port Gig-T / 4-port SFP v2 zl Mod
- min=0 \ max=20 SFP Transceivers

J9549A
See Configuration Note:1

HP 4-port 10GbE SFP+ zl Module
- min=0 \ max=4 SFP+ Transceivers

J9309A
See Configuration Note:2

HP 8-port 10 GbE SFP+ v2 zl Module
- min=0 \ max=8 SFP+ Transceivers

J9538A
See Configuration Note:5

HP 20p GT PoE+ / 2p SFP+ v2 zl Module
- min=0 \ max=2 SFP+ Transceivers

J9536A
See Configuration Note:5

HP 20-port Gig-T / 2-port SFP+ v2 zl Mod
- min=0 \ max=2 SFP+ Transceivers

J9548A
See Configuration Note:5

HP 4-Port 10 GbE X2 zl Module
- min=0 \ max=2 X2 Transceivers

J8707A
See Configuration Note:3

HP 4-Port 10 GbE CX4 zl Module
- min=0 \ max=2 CX4 Media Converter

J8708A

HP 8-port 10GBase-T v2 zl Module
- No Transceivers

J9546A

HP 24-Port 10/100/1000 PoE zl Module
- No Transceivers

J8702A

Configuration

HP 20p 10/100/1000 PoE+/4p MGBIC zl Mod   J9308A
- No Transceivers   See
                                                                          Configuration
                                                                          Note:1

HP 20-Port Gig-T/4-Port Mini-GBIC zl Module   J8705A
- No Transceivers   See
                                                                          Configuration
                                                                          Note:12

HP 24-Port Mini-GBIC zl Module   J8706A
- No Transceivers   See
                                                                          Configuration
                                                                          Note:12

HP 24-Port 10/100/1000 PoE+ zl Module   J9307A
- No Transceivers

HP 24-port Gig-T PoE+ v2 zl Module   J9534A
- No Transceivers

HP 24-Port 10/100 PoE+ zl Module   J9478A
- No Transceivers

HP 24-port 10/100 PoE+ v2 zl Module   J9547A
- No Transceivers

HP 24-port Gig-T v2 zl Module   J9550A
- No Transceivers

HP MSM765 zl Mobility Controller   J9370A
- No Transceivers

HP MSM775 zl Premium Controller Module   J9840A
- No Transceivers   See
                                                                          Configuration
                                                                          Note:10

HP Surv Brch Com zl Mod pwrby Msft Lync   J9485A
- No Transceivers. Double Height Module, takes up 2 Vertical slots*   See
                                                                          Configuration
                                                                          Note:4, 6, 7, 8, 9

HP Svc zlMod f/AvayaSBC pwrby AcmePacket   J9486A
- No Transceivers. Double Height Module, takes up 2 Vertical slots*   See
                                                                          Configuration
                                                                          Note:6, 7, 8, 9

HP Advanced Services v2 zl Module w/ HDD   J9857A
- No Transceivers   See
                                                                          Configuration
                                                                          Note:11

Configuration

HP Advanced Services v2 zl Module w/ SSD	J9858A
• No Transceivers	See Configuration Note:11
HP Adv Srvs zl Mod w/XenServer Platform	J9747A
• No Transceivers	See Configuration Note:6, 7, 8
HP Adv Srvs zl Mod w/vSphere Platform	J9748A
• No Transceivers	See Configuration Note:6, 7, 8

Configuration Rules:

Note 1   The following Transceivers install into this Module: (Use #0D1 if switch is CTO) - if applicable

HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC SX Transceiver	J4858C
HP 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
HP X121 1G SFP RJ45 T Transceiver	J8177C

Note 2   The following Transceivers install into this Module: (Use #0D1 or #B01 if switch is CTO) - if applicable

HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP 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 if switch is CTO) - if applicable

HP 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 SC LRM Transceiver	J9144A

Configuration

Note 4	The following Upgrades install into this Module:	
	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
Note 5	The following Transceivers install into this Module: (Use #0D1 if switch is CTO) - if applicable	
	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 X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X132 10G SFP+ LC ER Transceiver	J9153A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
	HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
	HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A

Note 6   For Switches: J9643A, J9532A, J9540A; If this module is selected, Then 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.

Note 7   If this module is selected, Then show following message:
For better airflow, This module must be located on left side only in the following Switches: J9642A, J9533A, J9539A, J9866A.
For better airflow, It is preferred, but not required, that This module be located on left side only in the following Switches: J9643A, J9532A, J9540A.

Note 8   For Switches J9642A, J9533A, J9539A, J9866A; If this module is selected, Then Max = 3 SLOTS on left side of chassis only, 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 9   This module occupies 2 Vertical Slots.

Note 10   Maximum of this Module per Chassis:
J9642A min=0\max=5 per Chassis
J9533A, J9539A, J9866A min=0\max=4 per Chassis
J9643A, J9532A, J9540A min=0\max=6 per Chassis
There are no restrictions on which slots these modules may go in.

Note 11   Maximum of this Module per Chassis:
J9642A, J9533A, J9539A, J9866A min=0\max=4 per Chassis
J9643A, J9532A, J9540A min=0\max=6 per Chassis
There are no restrictions on which slots these modules may go in.

Configuration

Note 12   The following Transceivers install into this Module: (Use #0D1 if switch is CTO) - if
                 applicable
                 HP X111 100M SFP LC FX Transceiver   J9054C
                 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

Transceivers

SFP Transceivers

HP X111 100M SFP LC FX Transceiver	J9054C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X121 1G SFP LC LH Transceiver	J4860C
HP X121 1G SFP LC LX Transceiver	J4859C
HP 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
HP X121 1G SFP RJ45 T Transceiver	J8177C

SFP+ Transceivers

HP X132 10G SFP+ LC ER Transceiver	J9153A
HP X132 10G SFP+ LC LR Transceiver	J9151A
HP X132 10G SFP+ LC LRM Transceiver	J9152A
HP X132 10G SFP+ LC SR Transceiver	J9150A
HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B#B01
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B#B01
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B#B01
HP X242 10G SFP+ 10m DAC Cable	J9286B
HP X242 10G SFP+ 15m DAC Cable	J9287B

Configuration

HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A#B01
HP 10G X244 XFP to SFP+ 3m Direct Attach Copper Cable	J9301A#B01
HP 10G X244 XFP to SFP+ 5m Direct Attach Copper Cable	J9302A#B01

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 .5m Multi-mode OM3 LC/LC FC Cable	AJ833A
HP 1m Multi-mode OM3 LC/LC FC Cable	AJ834A
HP 2 m Multimode OM3 LC/LC FC Cable	AJ835A
HP 5 m Multimode OM3 LC/LC FC Cable	AJ836A
HP 15 m Multimode OM3 LC/LC FC Cable	AJ837A
HP 30 m Multimode OM3 LC/LC FC Cable	AJ838A
HP 50 m Multimode OM3 LC/LC FC Cable	AJ839A
HP Premier Flex LC/LC OM4 2f 1m Cbl	QK732A
HP Premier Flex LC/LC OM4 2f 2m Cbl	QK733A
HP Premier Flex LC/LC OM4 2f 5m Cbl	QK734A
HP Premier Flex LC/LC OM4 2f 15m Cbl	QK735A
HP Premier Flex LC/LC OM4 2f 30m Cbl	QK736A
HP Premier Flex LC/LC OM4 2f 50m Cbl	QK737A

Switch Enclosure Options

Fan Trays

Configuration

HP 5406R zl2 Switch Fan Tray   J9831A

HP 5412R zl2 Switch Fan Tray   J9832A

Mounting Kit

HP X450 4U/7U Univ 4-Post Rack Mnt Kit   J9852A

See
Configuration
Note:1, 2

Configuration Rules:

Note 1   If this Mounting Kit is ordered with #0D1 then it integrates to the HP Universal Rack. (not the switch)

Note 2   If switches J9821A, J9868A, J9823A, J9824A, J9822A, J9825A and J9826A are installed into a rack,
              Then this Rack Mounting kit is required.

External Redundant Power Supplies

HP zl Power Supply Shelf   J8714A
   ● Height = 3U

Remarks:

Cables included: includes two 2 m PoE (EPS) cables; cables can be used to carry PoE power to the
connected switch; no extra cables are needed for a complete solution. Flexible mounting: the power shelf
can be mounted forward or rear facing in a rack; in a four-post rack, two power shelves can be mounted
front to front, requiring only 3U of rack space.

License

HP MSM760/765 Additional 40 AP License   J9371A

Remarks:

The License is an option to the J9370A.

Survivable Branch Communication Upgrades

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-port FXO / 2-port FXS Telephony Card   J9518A

Sangoma 1-port T1/E1/J1 Telephony Card   J9487A

Remarks:

The Sangoma Telephony Cards are accessories to the J9485A.

Configuration

US Federal Government certifications

HP zl Chassis FIPS 10K Rack Mounting Kit

<div align="right">J9708A
See Configuration Note:1</div>

HP 16mm x 32mm Tmpr-Evidence (20) Labels

<div align="right">J9740A
See Configuration Note:1</div>

HP 16mm x 32mm Tmpr-Evidence (120) Label

<div align="right">J9709A
See Configuration Note:1</div>

HP 5406 zl FIPS Opacity Shield Kit

<div align="right">J9710A
See Configuration Note:1</div>

HP 5412 zl FIPS Opacity Shield Kit

<div align="right">J9711A
See Configuration Note:1</div>

HP 5406 zl High Performance Fan Tray

<div align="right">J9721A
See Configuration Note:1</div>

HP 5412 zl High Performance Fan Tray

<div align="right">J9722A
See Configuration Note:1</div>

Cofiguration Rules:

Note 1   Do not display in Watson.

Technical Specifications

HP 5406R zl2 Switch (J9821A)	**Included accessories**	1 HP 5400R zl2 Management Module (J9827A) 1 HP 5406R zl2 Switch Fan Tray (J9831A)	
	I/O ports and slots	6 open module slots Supports a maximum of 48 10GbE ports or 144 autosensing 10/100/1000 ports or 144 mini-GBICs, or a combination	
	Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)	
	Fan tray	includes: 1 x J9831A 1 fan tray slot	
	Physical characteristics	**Dimensions**	17.5(w) x 17.75(d) x 6.9(h) in (44.45 x 45.09 x 17.53 cm) (4U height)
		Weight	24.5 lb (11.11 kg)
	Memory and processor	**Gigabit Module**	ARM11 @ 450 MHz; packet buffer size: 18 MB internal
		10G module	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
		Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
	Mounting	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
	Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
		10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
		Throughput	392.8 Mpps
		Routing/Switching capacity	528 Gb/s
		Switch fabric speed	1015 Gb/s
		Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
		MAC address table size	64000 entries
	Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
		Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
		Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
		Altitude	up to 10,000 ft (3 km)
		Acoustic	Power: 44 dB, Pressure: 31.7 dB ISO 7779, ISO 9296
	Electrical characteristics	**Frequency**	50/60 Hz
		Description	Does not come with power supply. Two 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 kJ/hr), (max. non-PoE); 3700 BTU/hr (3903 kJ/hr) (max. using PoE)
		AC Voltage	100 - 127 / 200 - 240 VAC

Technical Specifications

		Notes	Heat dissipation does not include heat dissipated by the PoE-powered devices themselves.
	Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
	Emissions	FCC part 15 Class A; EN 55022/CISPR 22 Class A	
	Immunity	**EN**	EN 55024, CISPR 24
		ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
		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, 1kV signal, 0.5 kV DC
		Conducted	IEC 61000-4-6; 3 Vrms
		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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)	
	Notes	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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 5412R zl2 Switch (J9822A)	**Included accessories**	1 HP 5400R zl2 Management Module (J9827A) 1 HP 5406R zl2 Switch Fan Tray (J9831A)	
	I/O ports and slots	12 open module slots Supports a maximum of 96 10GbE ports or 288 autosensing 10/100/1000 ports or 288 mini-GBICs, or a combination	
	Power supplies	4 power supply slots 2 minimum power supplies required (ordered separately)	
	Fan tray	includes: 1 x J9832A 1 fan tray slot	
	Physical characteristics	**Dimensions**	17.5(w) x 17.75(d) x 12.1(h) in (44.45 x 45.09 x 30.73 cm) (7U height)
		Weight	38.1 lb (17.28 kg)
	Memory and processor	**Gigabit Module**	ARM11 @ 450 MHz; packet buffer size: 18 MB internal
		10G module	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
		Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM

Technical Specifications

Mounting	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
	10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
	Throughput	785.7 Mpps
	Routing/Switching capacity	1.0 Tb/s
	Switch fabric speed	2.0 Tb/s
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	MAC address table size	64000 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
	Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power: 49 dB, Pressure: 35.7 dB ISO 7779, ISO 9296
Electrical characteristics	**Frequency**	50/60 Hz
	Description	Does not come with power supply. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	Maximum heat dissipation	4900 BTU/hr (5169 kJ/hr), (max. non-PoE); 7400 BTU/hr (7,807 kJ/hr) (max. using PoE)
	AC Voltage	100 - 127 / 200 - 240 VAC
	Notes	Heat dissipation does not include heat dissipated by the PoE-powered devices themselves. When more than four power cords are installed in a 5412R zl2 switch chassis, additional installation requirements are needed. Refer to the HP 5400R zl2 Switches Quick Setup Guide and Safety/Regulatory Information manual for details.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
Emissions	FCC part 15 Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	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, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms

Technical Specifications

	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)
Notes		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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 5406R-44G PoE+/2SFP+ (No PSU) v2 zl2 Switch (J9823A)	**Included accessories**		1 HP 5400R zl2 Management Module (J9827A) 1 HP 5406R zl2 Switch Fan Tray (J9831A) 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)
	I/O ports and slots		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 open 10GbE SFP+ transceiver slots 4 open module slots Supports a maximum of 34 10GbE ports or 140 autosensing 10/100/1000 ports or 98 mini-GBICs, or a combination
	Power supplies		2 power supply slots 1 minimum power supply required (ordered separately)
	Fan tray		includes: 1 x J9831A 1 fan tray slot
	Physical characteristics	**Dimensions**	17.5(w) x 17.75(d) x 6.9(h) in (44.45 x 45.09 x 17.53 cm) (4U height)
		Weight	28.11 lb (12.75 kg)
	Memory and processor	**Gigabit Module**	ARM11 @ 450 MHz; packet buffer size: 18 MB internal
		10G module	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
		Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
	Mounting		Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only
	Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
		10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
		Throughput	392.8 Mpps
		Routing/Switching capacity	528 Gb/s
		Switch fabric speed	1015 Gb/s

Technical Specifications

	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	MAC address table size	64000 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
	Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power: 44 dB, Pressure: 31.7 dB ISO 7779, ISO 9296
Electrical characteristics	**Frequency**	50/60 Hz
	Description	Does not come with power supply. Two open 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. using PoE)
	AC Voltage	110 - 127 / 200 - 240 VAC
	Idle power	215 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Heat dissipation does not include heat dissipated by the PoE-powered devices themselves.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
Emissions	FCC part 15 Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	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, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms
	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)	

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	Notes	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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP 5412R-92G-PoE+/2SFP+ (No PSU) v2 zl2 Switch (J9825A)	**Included accessories**		1 HP 5400R zl2 Management Module (J9827A) 1 HP 5412R zl2 Switch Fan Tray (J9832A) 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)
	I/O ports and slots		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 open 10GbE SFP+ transceiver slots 8 open module slots Supports a maximum of 66 10GbE ports or 284 autosensing 10/100/1000 ports or 194 mini-GBICs, or a combination
	Power supplies		4 power supply slots 2 minimum power supplies required (ordered separately)
	Fan tray		includes: 1 x J9832A 1 fan tray slot
	Physical characteristics	**Dimensions**	17.5(w) x 17.75(d) x 12.1(h) in (44.45 x 45.09 x 30.73 cm) (7U height)
		Weight	45.19 lb (20.5 kg)
	Memory and processor	**Gigabit Module**	ARM11 @ 450 MHz; packet buffer size: 18 MB internal
		10G module	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
		Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
	Mounting		Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only
	Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
		10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
		Throughput	785.7 Mpps
		Routing/Switching capacity	1.0 Tb/s
		Switch fabric speed	2.0 Tb/s
		Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
		MAC address table size	64000 entries
	Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
		Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
		Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)

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	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power: 49 dB, Pressure: 35.7 dB ISO 7779, ISO 9296
Electrical characteristics	**Frequency**	50/60 Hz
	Description	Does not come with power supply. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	Maximum heat dissipation	4900 BTU/hr (5169 kJ/hr), (max. non-PoE); 7400 BTU/hr (7,807 kJ/hr) (max. using PoE)
	AC Voltage	110 - 127 / 200 - 240 VAC
	Idle power	312 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Heat dissipation does not include heat dissipated by the PoE-powered devices themselves. When more than four power cords are installed in a 5412R zl2 switch chassis, additional installation requirements are needed. Refer to the HP 5400R zl2 Switches Quick Setup Guide and Safety/Regulatory Information manual for details.
Safety		CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950
Emissions		FCC part 15 Class A; EN 55022/CISPR 22 Class A
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	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, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms
	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)
Notes		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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

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HP 5406R-44G-PoE+/4SFP (No PSU) v2 zl2 Switch (J9824A)	**Included accessories**	1 HP 5400R zl2 Management Module (J9827A) 1 HP 5406R zl2 Switch Fan Tray (J9831A) 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)
	I/O ports and slots	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 4 open mini-GBIC slots 4 open module slots Supports a maximum of 32 10GbE ports or 140 autosensing 10/100/1000 ports or 100 mini-GBICs, or a combination
	Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)
	Fan tray	includes: 1 x J9831A 1 fan tray slot
	Physical characteristics	**Dimensions** — 17.5(w) x 17.75(d) x 6.9(h) in (44.45 x 45.09 x 17.53 cm) (4U height) **Weight** — 26.19 lb (11.88 kg)
	Memory and processor	**Gigabit Module** — ARM11 @ 450 MHz; packet buffer size: 18 MB internal **10G module** — ARM11 @ 550 MHz; packet buffer size: 18 MB internal **Management Module** — Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
	Mounting	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only
	Performance	**1000 Mb Latency** — < 2.9 ìs (FIFO 64-byte packets) **10 Gbps Latency** — < 2.0 ìs (FIFO 64-byte packets) **Throughput** — 392.8 Mpps **Routing/Switching capacity** — 528 Gb/s **Switch fabric speed** — 1015 Gb/s **Routing table size** — 10000 entries (IPv4), 5000 entries (IPv6) **MAC address table size** — 64000 entries
	Environment	**Operating temperature** — 32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed **Operating relative humidity** — 15% to 95% @ 113°F (45°C), noncondensing **Nonoperating/Storage temperature** — -40°F to 158°F (-40°C to 70°C) **Nonoperating/Storage relative humidity** — 15% to 95% @ 149°F (65°C), noncondensing **Altitude** — up to 10,000 ft (3 km) **Acoustic** — Power: 44 dB, Pressure: 31.7 dB ISO 7779, ISO 9296
	Electrical	**Frequency** — 50/60 Hz

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characteristics	**Description**	Does not come with power supply. Two open 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. using PoE)
	AC Voltage	110 - 127 / 200 - 240 VAC
	Idle power	215 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Heat dissipation does not include heat dissipated by the PoE-powered devices themselves.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
Emissions	FCC part 15 Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	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, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms
	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)	
Notes	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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 5412R-92G-PoE+/4SFP (No PSU) v2 zl2 Switch (J9826A)	**Included accessories**	1 HP 5400R zl2 Management Module (J9827A) 1 HP 5412R zl2 Switch Fan Tray (J9832A) 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)
	I/O ports and slots	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 4 open mini-GBIC slots

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	8 open module slots Supports a maximum of 64 10GbE ports or 284 autosensing 10/100/1000 ports or 196 mini-GBICs, or a combination	
Power supplies	4 power supply slots 2 minimum power supplies required (ordered separately)	
Fan tray	includes: 1 x J9832A 1 fan tray slot	
Physical characteristics	**Dimensions**	17.5(w) x 17.75(d) x 12.1(h) in (44.45 x 45.09 x 30.73 cm) (7U height)
	Weight	45.4 lb (20.5 kg)
Memory and processor	**Gigabit Module**	ARM11 @ 450 MHz; packet buffer size: 18 MB internal
	10G module	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
	Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
Mounting	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only	
Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
	10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
	Throughput	785.7 Mpps
	Routing/Switching capacity	1.0 Tb/s
	Switch fabric speed	2.0 Tb/s
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	MAC address table size	64000 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
	Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power: 49 dB, Pressure: 35.7 dB ISO 7779, ISO 9296
Electrical characteristics	**Frequency**	50/60 Hz
	Description	Does not come with power supply. Four power supply slots are available; three different power supplies are available. See power supply products for additional specifications.
	Maximum heat dissipation	4900 BTU/hr (5169 kJ/hr), (max. non-PoE); 7400 BTU/hr (7,807 kJ/hr) (max. using PoE)
	AC Voltage	110 - 127 / 200 - 240 VAC
	Idle power	312 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Heat dissipation does not include heat dissipated

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by the PoE-powered devices themselves. When more than four power cords are installed in a 5412R zl2 switch chassis, additional installation requirements are needed. Refer to the HP 5400R zl2 Switches Quick Setup Guide and Safety/Regulatory Information manual for details.

Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	
Emissions	FCC part 15 Class A; EN 55022/CISPR 22 Class A	
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	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, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms
	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)	
Notes	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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 5406R-8XGT/8SFP+ (No PSU) v2 zl2 Switch (J9868A)	**Included accessories**	1 HP 5400R zl2 Management Module (J9827A) 1 HP 5406R zl2 Switch Fan Tray (J9831A) 1 HP 8-port 10GbE SFP+ v2 zl Module (J9538A) 1 HP 8-port 10GBASE-T v2 zl Module (J9546A)
	I/O ports and slots	8 RJ-45 10GbE ports (IEEE 802.3an-2006 Type 10GBASE-T) 8 open 10GbE SFP+ transceiver slots 4 open module slots Supports a maximum of 32 10GbE ports or 96 autosensing 10/100/1000 ports or 96 mini-GBICs, or a combination
	Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)
	Fan tray	includes: 1 x J9831A 1 fan tray slot
	Physical characteristics	**Dimensions** 17.5(w) x 17.75(d) x 6.9(h) in (44.45 x 45.09 x 17.53 cm) (4U height)
		Weight 28.11 lb (12.75 kg)

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Memory and processor	**10G module**	ARM11 @ 550 MHz; packet buffer size: 18 MB internal
	Management Module	Freescale P2020 dual core @ 1.2 GHz, 16 MB flash, 1 GB SD Card, 4 GB DDR3 SODIMM
Mounting		Mounts in an EIA standard 19-inch telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance	**1000 Mb Latency**	< 2.9 ìs (FIFO 64-byte packets)
	10 Gbps Latency	< 2.0 ìs (FIFO 64-byte packets)
	Throughput	392.8 Mpps
	Routing/Switching capacity	528 Gb/s
	Switch fabric speed	1015 Gb/s
	Routing table size	10000 entries (IPv4), 5000 entries (IPv6)
	MAC address table size	64000 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C); 0°C to 40°C with J8177C transceiver installed, 0°C to 35°C with FIPS Opacity Shield installed
	Operating relative humidity	15% to 95% @ 113°F (45°C), noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power: 44 dB, Pressure: 31.7 dB ISO 7779, ISO 9296
Electrical characteristics	**Frequency**	50/60 Hz
	Description	Does not come with power supply. Two open 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. using PoE)
	AC Voltage	110 - 127 / 200 - 240 VAC
	Idle power	215 W
	Notes	Idle power is the actual power consumption of the device with no ports connected. Heat dissipation does not include heat dissipated by the PoE-powered devices themselves.
Safety		CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950
Emissions		FCC part 15 Class A; EN 55022/CISPR 22 Class A
Immunity	**EN**	EN 55024, CISPR 24
	ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD; HP ENV. 765.002
	Radiated	IEC 61000-4-3; 3 V/m
	EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)

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	Surge	IEC 61000-4-5; 1 kV/2 kV AC, 1kV signal, 0.5 kV DC
	Conducted	IEC 61000-4-6; 3 Vrms
	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 (RJ-45 Ethernet); SNMP Manager; out-of-band management (serial RS-232C or Micro USB)
Notes		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: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
Standards and protocols (applies to all products in series)	**BGP**	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 5492 Capabilities Advertisement with BGP-4
	Device Management	RFC 1591 DNS (client) HTML and telnet management
	General Protocols	IEEE 802.1ad Q-in-Q 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 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

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	RFC 1350 TFTP Protocol (revision 2)
	RFC 1519 CIDR
	RFC 1542 BOOTP Extensions
	RFC 2030 Simple Network Time Protocol (SNTP) v4
	RFC 2131 DHCP
	RFC 2453 RIPv2
	RFC 2548 (MS-RAS-Vendor only)
	RFC 3046 DHCP Relay Agent Information Option
	RFC 3576 Ext to RADIUS (CoA only)
	RFC 3768 VRRP
	RFC 4675 RADIUS VLAN & Priority
	UDLD (Uni-directional Link Detection)
IP Multicast	RFC 3376 IGMPv3 (host joins only)
	RFC 3973 PIM Dense Mode
	RFC 4601 PIM Sparse Mode
IPv6	RFC 1981 IPv6 Path MTU Discovery
	RFC 2375 IPv6 Multicast Address Assignments
	RFC 2460 IPv6 Specification
	RFC 2464 Transmission of IPv6 over Ethernet Networks
	RFC 2710 Multicast Listener Discovery (MLD) for IPv6
	RFC 2925 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 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

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		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
	MIBs	IEEE 802.1ap (MSTP and STP MIB's only) RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 2933 IGMP MIB
	Network Management	IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON
	OSPF	RFC 2328 OSPFv2 RFC 3101 OSPF NSSA RFC 5340 OSPFv3 for IPv6
	QoS/CoS	RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF)
	Security	IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP) Secure Sockets Layer (SSL) SSHv2 Secure Shell

QuickSpecs

Accessories

HP 5400R zl2 Switch Series accessories

Modules

HP 8-port 10GBASE-T v2 zl Module	J9546A
HP 8-port 10GbE SFP+ v2 zl Module	J9538A
HP 20-port Gig-T PoE+ / 2-port 10GbE SFP+ v2 zl Module	J9536A
HP 20-port Gig-T PoE+ / 4-port SFP v2 zl Module	J9535A
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 10/100 PoE+ v2 zl Module	J9547A
HP 24-port Gig-T v2 zl Module	J9550A
HP 20-port Gig-T / 4-port SFP v2 zl Module	J9549A
HP 20-port Gig-T / 2-port 10GbE SFP+ v2 zl Module	J9548A
HP Advanced Services v2 zl Module with HDD	J9857A
HP Advanced Services v2 zl Module with SSD	J9858A
NEW HP 5400R zl2 Management Module	J9827A

Transceivers

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

Cables

HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable	J9300A
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable	J9301A
HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable	J9302A
HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A

Accessories

HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
HP 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
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B
Power Supply	
NEW HP 5400R 700W PoE+ zl2 Power Supply	J9828A
NEW HP 5400R 1100W PoE+ zl2 Power Supply	J9829A
NEW HP 5400R 2750W PoE+ zl2 Power Supply	J9830A
Mounting Kit	
NEW HP X450 4U/7U Universal 4-Post Rack Mounting Kit	J9852A
License	
HP MSM Additional 40 Access Point License	J9371A
HP MSM Additional 40 Access Point E-LTU	J9371AAE
HP 5406R zl2 Switch (J9821A)	
NEW HP 5406R zl2 Switch Fan Tray	J9831A
HP 5412R zl2 Switch (J9822A)	
NEW HP 5412R zl2 Switch Fan Tray	J9832A
HP 5406R-44G-PoE+/2SFP+ (No PSU) v2 zl2 Switch (J9823A)	
NEW HP 5406R zl2 Switch Fan Tray	J9831A
HP 5412R-92G-PoE+/2SFP+ (No PSU) v2 zl2 Switch (J9825A)	
NEW HP 5412R zl2 Switch Fan Tray	J9832A
HP 5406R-44G-PoE+/4SFP (No PSU) v2 zl2 Switch (J9824A)	
NEW HP 5406R zl2 Switch Fan Tray	J9831A
HP 5412R-92G-PoE+/4SFP (No PSU) v2 zl2 Switch (J9826A)	
NEW HP 5412R zl2 Switch Fan Tray	J9832A
HP 5406R-8XGT/8SFP+ (No PSU) v2 zl2 Switch (J9868A)	
NEW HP 5406R zl2 Switch Fan Tray	J9831A

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