

Overview

Models

HP 425 Wireless Dual Radio 802.11n (AM) Access Point	JG653A
HP 425 Wireless Dual Radio 802.11n (WW) Access Point	JG654A
HP 425 Wireless Dual Radio 802.11n (JP) Access Point	JG655A
HP 425 Wireless Dual Radio 802.11n (IL) Access Point	JG656A
HP 425 Wireless Dual Radio 802.11n (AM) 8 unit Eco-pack Access Points	JG687A
HP 425 Wireless Dual Radio 802.11n (WW) 8 unit Eco-pack Access Points	JG688A

Key features

- Dual radio—two spatial stream access supporting 300 Mb/s per radio
- Supports embedded antennas as well as an optional external antenna
- Powered via IEEE 802.3af PoE or local power supply
- Comprehensive WLAN security
- Lifetime Warranty 2.0 with 24x7 phone support for three years

Introduction

Working in unison with HP controllers, the HP 425 802.11n Dual Radio Access Point Series delivers high-performance networking solutions. The enhanced controller architecture scales to IEEE 802.11n without requiring a controller replacement. The controller provides advanced radio resource management (RRM), including client load balancing and interference mitigation. The HP wireless controllers support a fast-roaming capability—an important feature, especially for VoIP communications.

The HP 425 access point works in managed mode with an HP wireless LAN controller. The access points provide RF spectrum analysis with detection and classification of non-IEEE 802.11 interference, and have the ability to automatically avoid interference. Wireless security is comprehensive with integrated wireless IDS and support for internal and external authentication, authorization, and accounting (AAA) servers*built-in stateful firewall*per-user VLAN mapping*and authentication.

In addition to working with the HP MSM controllers, the access points work with the new HP 10500/7500 20G Unified Wired-WLAN Module, the HP 800 Series Unified Wired-WLAN Switch, and the HP WX5002/5004 wireless controllers.

Features and benefits

Management

- **Wi-Fi Clear Connect**
provides a system-wide approach to improving WLAN reliability by proactively determining and adjusting to changing RF conditions*helps optimize WLAN performance by detecting interference from Wi-Fi and non-Wi-Fi sources using spectrum analysis capabilities built into the access points, identifying rogue activity, and making decisions at a system-wide level
- **Advanced radio resource management**
 - **Automatic radio power adjustments**
include real-time power adjustments based on changing environmental conditions and signal coverage adjustment
 - **Automatic radio channel**
provides intelligent channel switching and real-time Interference detection
 - **Intelligent client load balancing**
determines number of clients across neighboring APs and adjusts client allocation to balance the load
 - **Airtime fairness**
provides equal RF transmission time for wireless clients
- **Spectrum analysis**
 - **Power/frequency spectrum analysis**
measures noise from IEEE 802.11 remote sources
 - **Signal detection/classification**



Overview

- identifies source of RF interference, for example, Bluetooth®, cordless phones, and microwave ovens
- **Evaluation of channel quality**
 - helps detect severe channel degradation and improves the reporting of poor RF performance
- **Integrated IDS**
 - detects and locates unknown and rogue devices (see controller data sheet for details)
- **Access point management**
 - provides secure Web browser (SSL and VPN), command-line interface, SNMP v2c, SNMP v3, MIB-II with traps, and RADIUS Authentication Client MIB (RFC 2618)*offers embedded HTML management tool with secure access (SSL and VPN)*implements scheduled configuration and firmware upgrades from a central controller
- **HP Intelligent Management Center and Wireless Services Manager Software**
 - provide central management for discovery, logging, status, and configuration management
- **Diagnostics**
 - records association, authentication, and DHCP events in client event log*packet capture tool for Ethernet and IEEE 802.11 interfaces (PCAP format)*includes data rate matrix
- **Enhanced AP survivability**
 - continues to operate using the old IP address while the AP searches for a new controller
- **Compatible with HP controllers and unified switches and modules**
 - HP MSM720, MSM760, MSM765zl and MSM775zl version 6.2, minimum
 - HP WX5000 Access Controller Series*controller software version CMW520-R2308P29-EI, minimum
 - HP 10500/7500 20G Unified Wired-WLAN Module*software version CMW520-R2308P29, minimum
 - HP 830 Unified Wired-WLAN Switch Series controller software version CMW520-R3308P29, minimum

Quality of Service (QoS)

- **Rate limiting**
 - supports per-wireless client ingress-enforced maximums and per-wireless client, per-queue guaranteed minimums
- **Centralized traffic**
 - maintains Layer 2 and Layer 3 QoS settings when using centralized traffic or guest access
- **IEEE 802.1p prioritization**
 - delivers data to devices based on the priority and type of traffic
- **Wireless**
 - **L2/L3/L4 classification**
 - IEEE 802.1p VLAN priority, SpectraLink SVP, and DiffServ
 - **Virtual Service Community (VSC)**
 - assign Wi-Fi MultiMedia (WMM), IEEE 802.11e EDCF, and Service-Aware priority
 - **VoIP call capacity**
 - supports 12 active calls per radio, maximum
- **SpectraLink Voice Priority (SVP) support**
 - prioritizes SpectraLink voice IP packets sent from a SpectraLink NetLink SVP server to SpectraLink wireless voice handsets to help ensure excellent voice quality

Connectivity

- **IEEE 802.3af Power over Ethernet (PoE) support**
 - simplifies deployment and dramatically reduces installation costs by helping to eliminate the time and cost involved in supplying local power at each access point location
- **Local power option**
 - offers 48V DC power connector for use with an optional power supply when PoE is not available
- **Auto-MDIX**
 - adjusts automatically for straight-through or crossover cables on the Ethernet interface
- **Console port**
 - aids problem resolution

Mobility

- **Bandsteering**
 - redirects 5 GHz-capable clients automatically to the less-congested 5 GHz spectrum



Overview

- **HP 425 Antenna**
 - **Embedded antenna**
provides excellent coverage through use of embedded high-gain antennas (4 dBi antenna at 2.4 GHz and 5 dBi antenna at 5 GHz)*no need for the added cost of external antennas
 - **Optional external antenna**
includes four indoor RP-SMA connectors for use with optional external antennas
- **Anywhere, anytime wireless coverage**
dual-radio IEEE 802.11b/g/n and 802.11a/n access point*per-radio software-selectable configuration of frequency bands* self-healing, self-optimizing local mesh that extends network availability*Wi-Fi Alliance Certifications for interoperability with all IEEE 802.11a/b/g/n client devices*and IEEE 802.3af PoE
- **Medical standards**
meets the European EN60601-1-2 standard for healthcare
- **Virtual Service Communities (VSCs)**
includes up to 16 SSIDs per radio, each with unique MAC address and configurable SSID broadcasts*individual security and QoS profiles per VSC*configurable DTIM and minimum data rate per VSC*VSCs that can be mapped to separate IEEE 802.1Q VLANs* WMM and/or WMM-PS*a security filter*and an IP filter
- **AP client access control functions**
 - offers IEEE 802.1X authentication using EAP-SIM, EAP-FAST, EAP-TLS, EAP-TTLS, and PEAP
 - delivers MAC address authentication using local or RADIUS access lists
 - provides RADIUS AAA using EAP-MD5, PAP, CHAP, and MS-CHAPv2
 - supports RADIUS Client (RFC 2865 and 2866) with location-aware support
 - provides Layer 2 wireless client isolation

Security

- **Integrated IDS support**
 - **Automated AP and client classification**
reduces manual effort (administrator can override AP classification)
 - **Comprehensive detection capabilities**
detects a wide range of attacks
 - **Flexible event reporting**
enables configuration of which events will result in notifications
 - **Location tracking capabilities**
helps identify the rogue device location
 - **Flexible deployment models**
supports time slicing or dedicating a radio to detect full-time (see the controller datasheet for details)
- **IEEE 802.1X support**
provides port-based user authentication with support for Extensible Authentication Protocol (EAP) MD5, TLS, TTLS, and PEAP with choice of AES, TKIP, and static or dynamic WEP encryption for protecting wireless traffic between authenticated clients and the access point
- **Choice of IEEE 802.11i, WPA2, or WPA**
locks out unauthorized wireless access by authenticating users prior to granting network access*robust Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (TKIP) encryption secures the data integrity of wireless traffic
- **TKIP/WEP encryption**
is supported only on legacy IEEE 802.11a/b/g clients as it has been deprecated from the IEEE 802.11n standard
- **Local wireless bridge client traffic filtering**
prevents communication between wireless devices associated with the same access point

Additional information

- **RFC support**
refer to the [Mobility Specification Sheet](http://h17007.www1.hp.com/docs/mobility/4AA3-3883ENW.pdf) for a list of RFCs and other industry standards supported by the MSM solution at <http://h17007.www1.hp.com/docs/mobility/4AA3-3883ENW.pdf>

Warranty and support

- **Lifetime Warranty 2.0**



Overview

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 MSM765 zL 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

HP 425 802.11n Dual Radio Access Point Series accessories

External Power Supplies	HP 1-port Power Injector	J9407B See Configuration Note 2
	HP Gigabit IntelliJack 48V Power Supply	JD055B See Configuration Note 1, 2
External Antenna	HP Indoor Omni 2.5/6dBi MIMO 4 Elmnt Ant	JG696A

Configuration Rules

Note 1	This power supply is supported on the following Access Points	
	HP 425 Wireless 802.11n (AM) AP	JG653A
	HP 425 Wireless 802.11n (AM) 8 Pack AP	JG687A
	HP 425 Wireless 802.11n (WW) AP	JG654A
	HP 425 Wireless 802.11n (WW) 8 Pack AP	JG688A
	HP 425 Wireless 802.11n (JP) AP	JG655A
	HP 425 Wireless 802.11n (IL) AP	JG656A
Note 2	Localization required. (See Localization Menu)	

Technical Specifications

HP 425 Wireless Dual Radio 802.11n (AM) Access Point (JG653A)

HP 425 Wireless Dual Radio 802.11n (WW) Access Point (JG654A)

HP 425 Wireless Dual Radio 802.11n (JP) Access Point (JG655A)

HP 425 Wireless Dual Radio 802.11n (IL) Access Point (JG656A)

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Ports	1 RJ-45 autosensing 10/100/1000 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)*Duplex=10BASE-T/100BASE-TX=half or full*1000BASE-T=full only 1 RJ-45 serial console port	
AP characteristics	Radios (built-in)	802.11 a/n, b/g/n
	Radio operation modes	Client access, Local mesh, Packet capture
	AP operation modes	Controlled
	Wi-Fi Alliance Certification	a/b/g/n Wi-Fi Certified
	Antenna	(2) 4 dBi 2.4 GHz and (2) 5 dBi 5 GHz omnidirectional antennas
	Number of internal antennas	4
	Number of external antennas	4
Physical characteristics	Dimensions	7.43(w) x 7.43(d) x 2(h) in (18.86 x 18.86 x 5.08 cm)
	Weight	1.65 lb (.75 kg) mounting bracket
Memory and processor	Single core @ 560 MHz, 128 MB flash, 128 MB SDRAM	
Mounting and enclosure	Indoor, plenum rated*includes ceiling/wall mount kei as well as two ceiling mounting	
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Non-operating/ Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/ Storage relative humidity	5% to 95%, noncondensing
Electrical characteristics	Description	IEEE 802.3af PoE compliant for Gigabit Ethernet
	Maximum power rating	12.9 W
Frequency band and Operating channels	Americas	2.412 - 2.462 GHz (1 - 11 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 (excluding 5600-5670 MHz) channels) 5.745 - 5.825 GHz (149 - 165 channels)
	European Union	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 (excluding 5600-5650 MHz) channels)
	Rest of World (Actual channels designated by selecting country in UI)	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels) 5.745 - 5.825 GHz (149 - 165 channels)
	Taiwan	2.412 - 2.462 GHz (1 - 11 channels) 5.280 - 5.320 GHz (56 - 64 channels) 5.500 - 5.700 GHz (100 - 140 (excluding 5600-5670 MHz) channels) 5.745 - 5.825 GHz (149 - 165 channels)

Technical Specifications

	Japan	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels) 5.500 - 5.700 GHz (100 - 140 channels)
	Israel	2.412 - 2.472 GHz (1 - 13 channels) 5.180 - 5.320 GHz (36 - 64 channels)
Radio	FCC Part 15.247*FCC Part 15.407 (US)*RSS-210 (Canada)*EN 300 328*ARIB STD-T66*IDA Registration (Singapore)*RCR STD-33*ARIB STD-T71 (Japan)*EN 301 893 (EU)*KCC approval (Korea)	
Safety	UL 2043*UL 60950-1*IEC 60950-1*EN 60950-1*CAN/CSA-C22.2 No. 60950-1	
Medical	EN60601-1-2	
RF Exposure	FCC Bulletin OET-65C*RSS-102*CFR 47, Part 2, Subpart J*ANSI/IEEE C95.1 (99)*Ministry of Health Safety Code 6*Australian Radiation Protection Std.	
Features	Dual radio=IEEE 802.11a/n for high-throughput applications and IEEE 802.11b/g/n for legacy support applications - Integrated antennas for both IEEE radios, supporting two spatial streams and 2x2 MIMO - Four embedded antennas - Both radios operate at full power and full performance on IEEE 802.3af PoE/Gigabit Ethernet - External antenna, optional	
Emissions	EN 55022 Class B*EN 301 489-1*EN 301 489-17*ICES-003 Class B*FCC Part 15, Class B	
Notes	<p>The HP 425 access point power information listed excludes the embedded antenna. Review the HP documentation for your AP to understand the maximum output setting for your AP based on your country's regulations.</p> <p>Two spatial stream AP, supporting 300 Mb/s per radio.</p> <p>Maximum transmit power varies by country.</p> <p>Regulatory model number=BJNGA-FB0002</p>	
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.	

Radio characteristics

Note=These radio characteristics apply to the HP 425 access points, including the embedded antenna. Power is limited based on country of operation.

IEEE 802.11n 5 GHz @ 20 MHz channel	Data rate	MCS0, MCS8 30 Mbps	MCS7, MCS15 300 Mbps
	Receiver sensitivity	-92 dBm	-70 dBm
	Transmit power	25 dBm	20 dBm
IEEE 802.11n 5 GHz @ 20 MHz channel	Data rate	MCS0, MCS8 14.4 Mbps	MCS7, MCS15 144.4 Mbps
	Receiver sensitivity	-95 dBm	-73 dBm
	Transmit power	25 dBm	20 dBm
IEEE 802.11n 2.4 GHz @ 40 MHz channel	Data rate	MCS0, MCS8 30 Mbps	MCS7, MCS15 300 Mbps
	Receiver sensitivity	-93 dBm	-73 dBm
	Transmit power	24 dBm	22 dBm
IEEE 802.11n 2.4 GHz @ 20 MHz channel	Data rate	MCS0, MCS8 14.4 Mbps	MCS7, MCS15 144.4 Mbps
	Receiver sensitivity	-96 dBm	-76 dBm
	Transmit power	24 dBm	22 dBm

Technical Specifications

IEEE 802.11a 5 GHz	Data rate	6 Mbps	54 Mbps		
	Receiver sensitivity	-95 dBm	-76 dBm		
	Transmit power	25 dBm	22 dBm		
IEEE 802.11b/g 2.4 GHz	Data rate	1 Mbps	11 Mbps	6 Mbps	54 Mbps
	Receiver sensitivity	-99 dBm	-93 dBm	-96 dBm	-79 dBm
	Transmit power	25 dBm	25 dBm	25 dBm	23 dBm

MCS Index	800 nS Guard Interval		400 nS Guard Interval	
	20 MHz Rate (Mbps)	40 MHz Rate (Mbps)	20 MHz Rate (Mbps)	40 MHz Rate (Mbps)
0	6.5	13.5	7.2	15
1	13	27	14.4	30
2	19.5	40.5	21.7	45
3	26	54	28.9	60
4	39	81	43.3	90
5	52	108	57.8	120
6	58.5	121.5	65	135
7	65	135	72.2	150
8	13	27	14.4	30
9	26	54	28.9	60
10	39	81	43.3	90
11	52	108	57.8	120
12	78	162	86.7	180
13	104	216	115.6	240
14	117	243	130	270
15	130	270	144.4	300

Standards and Protocols

(applies to all products in series)

Mobility

- IEEE 802.11a High Speed Physical Layer in the 5 GHz Band
- IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band
- IEEE 802.11h Dynamic Frequency Selection
- IEEE 802.11d Global Harmonization
- IEEE 802.11i Medium Access Control (MAC) Security Enhancements
- IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band

Accessories

HP 425 802.11n Dual Radio Access Point Series accessories

Power Supply

HP 1-port Power Injector

J9407B

HP Gigabit IntelliJack 48V Power Supply

JD055B

External Antenna

HP Indoor Omnidirectional Dual Band 2.5/6dBi MIMO 4 Element Antenna

JG696A

To learn more, visit www.hp.com/networking

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Overview

Models

HP IMC Wireless Service Manager Software Module with 50-Access Point E-LTU

JF414AAE

Key features

- Intuitive, easy-to-use interface
- Unified wired and wireless device management
- Range of topology management modes
- Low maintenance costs and low TCO

Product overview

HP Intelligent Management Center (IMC) software is a modular comprehensive resource management platform. With its extensive device support, IMC software provides true end-to-end management for the entire network, and entire operation cycle.

An optional IMC module, HP IMC Wireless Services Manager (WSM) software provides unified management of wired and wireless networks, adding network management functions into existing wired network management systems. IMC WSM software offers wireless LAN (WLAN) device configuration, topology, performance monitoring, RF heat mapping, and WLAN service reports.

IMC WSM software facilitates centralized control over your wireless network, even if it is geographically dispersed. This reduces the time needed to deploy configuration changes and provides uniformity throughout your WLAN infrastructure.

Features and benefits

Management

- **NEW WLAN device management**
IMC Wireless Services Manager (WSM) software supports the HP MSM series of WLAN devices, including controllers, fit access points (APs), and fat APs] it also supports the Cisco wireless infrastructure
- **WLAN device management**
 - access controller list
 - access controller detail information
 - fit/fat AP list
 - fit/fat AP detail information
- **Wireless status view**
WSM software displays key information in one place] for controllers it maintains status on mobility activity, DHCP server, VPNs, ports, VLANs, IPSec, and RADIUS] for APs, the software provides details on usage at the client level down to the CPU load level and across neighbors and local meshes] provides north-south status views (high-level health down to detailed status of services such as your RADIUS running on controllers)
- **WLAN management**
automatically displays WLAN SSIDs in your network, compares performance, and relates APs to the WLAN by SSID
- **Batch configuration wizard**
the batch configuration wizard can help users configure the WLAN network step by step, including WLANs, AP groups, and radio parameters
- **Topology—access controller and fit AP logical topology**
displays logical and physical views of WLAN by AP, controller, or WLAN, and view status as well as detailed information in real time] provides links to quickly click and find device location
- **Location views**
location topology feature shows the physical position for each AP and supports the JPG/PNG format background image] RF coverage displays the radio frequency coverage area of each AP to help you locate the problem of slow access speed or network access failure] you can then redeploy APs or adjust radio power or channel parameters to achieve the best signal coverage with the lowest cost
- **RF predictor**

Overview

- shows area coverages so you can predict the coverage before buying or moving APs
- antennas shape direct signals so you can play with antenna types and add in obstacles to plan for best performance
- predicts best placement of APs based on scale and obstacles you provide
- send and save your RF plan using popular file formats
- **Client management**
because connection issues require information about your client, WSM software tracks client connection history, and provides top-down (AP-to-client) and client-to-AP views to ease troubleshooting processes
- **Performance monitoring**
WSM software displays graphs and performance charts for wireless devices status, wireless alarms statistics, online client trending, and AP traffic monitoring) users can define tasks to monitor performance items of interest
- **WLAN reports**
provide AP statistics, radio statistics, client statistics, and traffic statistics
- **Wireless terminal trace display**
logs the online and offline records of a wireless terminal and uses these records to display the movements of the wireless terminal in the location view
- **WDS/mesh management**
WSM software displays local mesh neighborhood and local mesh link information
- **PoE port management**
to facilitate management, WSM software can automatically learn which APs are connected to a switch's PoE ports, enabling control of those PoE ports) set the fault AP to perform a cold restart, which will be a fast resume
- **Google Maps™ integration**
with WSM software support for Google Maps integration, users can add hotspots (such as Starbucks) to the map, view the number of APs and clients in the hotspot, and jump to the location topology from the hotspot to view detailed information
- **Wireless intrusion detection integration**
helps manage the intrusion detection system at the controller level
- **Support for HP MSM radio resource management**
provides configuration management of radio resources, including auto power, auto channel, and scheduling
- **Location-based services**
locate MSM APs and connected clients
- **NEW Real-time Spectrum Guard**
IMC WSM software spectrum analysis scans the 2.4 GHz and 5 GHz frequency bands to detect interference and affected channels, as well as to generate real-time spectrum data) operators can obtain the wireless spectrum performance and WLAN security by viewing the current interference data and real-time spectrum data) real-time Spectrum Guard requires a license

Warranty and support

- **Electronic and telephone support**
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

Technical Specifications

HP IMC Wireless Service Manager Software Module with 50-Access Point E-LTU (JF414AAE)

Minimum system hardware	3.0 GHz Intel® Pentium® III or equivalent processor 4 GB RAM memory 30 GB storage 10/100 Mbps NIC
Recommended system hardware	3.0 GHz Intel® Xeon® or Intel® Core™2 Duo processor or equivalent processor 8 GB RAM memory 150 GB storage 1000 Mbps NIC
Recommended software	Microsoft® Windows® Server 2003 Enterprise Edition SP2 Microsoft® Windows® Server 2003 Enterprise Edition SP2 (32-bit) Microsoft® Windows® Server 2008 (32-bit or 64-bit) Standard or Enterprise Edition Microsoft® Windows® Server 2008 R2 (64-bit) Standard or Enterprise Editi
Browsers	Microsoft Internet Explorer 6.0 or later Firefox 3.0
Notes	It should be a standalone server that is not on the same server as the IMC platform.
Services	3-Year, 9x5 SW phone support, software updates (UV740E) 3-year, 24x7 SW phone support, software updates (UV741E)

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.

Accessories

HP IMC Wireless Services Manager Software accessories

License	
HP IMC Wireless Services Manager 50-Access Point E-LTU	JF415AAE
HP IMC Wireless Services Manager Components Location Service Package E-LTU	JG142AAE
HP IMC Wireless Service Manager / Real-Time Spectrum Guard E-LTU	JG816AAE
HP IMC Wireless Service Manager / Real-Time Location Services Additional 50-node E-LTU	JG759AAE
HP PCM Mobility Manager to IMC Wireless Service Manager Upg with 250-node E-LTU	JG769AAE

To learn more, visit www.hp.com/networking

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Overview

Models

HP IMC User Access Manager Software Module with 50-user E-LTU

JG752AAE

Key features

- One central database of users and available services
- Advanced reporting capabilities
- Directory of network-attached devices and endpoints
- Support for IEEE 802.1X, EAP, PAP, CHAP, MS-CHAP, and MS-CHAPv2
- Access to LDAP-compliant directory services

Product overview

Intelligent Management Center (IMC) software is a modular comprehensive resource management platform. With its extensive device support, IMC software provides true end-to-end management for the entire network, as well as the entire operation cycle.

HP IMC User Authentication Manager (UAM) software is an IMC module that supports user identity authentication based on the access policies associated with infrastructure resources, such as routers, switches, and servers. UAM software extends management to wired, wireless, and remote network users, enabling the integration, correlation, and collaboration of network device management and user management on a single unified platform.

The IMC UAM software solution provides a full-featured RADIUS server that supports centralized authentication, authorization, and accounting management of endpoints that connect and use network services. Policy management provides access control with tiered privilege levels. As a result, IMC UAM software helps reduce vulnerabilities and security breaches. IMC User Access Manager now supports a concurrent licensing model.

Features and Benefits

Management

- **Centralized access user management**
provides centralized policy creation to set the appropriate access rights for each type of user and device across the network[†] access-user-related management functions are integrated into a user-friendly interface for easy operation[†] user management includes authentication binding policy, security policy, and access control policy[†] additionally, policies can be set for concurrent sessions and proxy servers
- **NEW Centralized resource management of devices and users**
provides centralized maintenance of basic user information, such as name, contact information, and user group[†] this supplemental information function allows user data to be customized as needed, such as student ID and grade for campus networks, or department and title for enterprise networks[†] it also supports multiple instances of HP Intelligent Management Center User Access Management (UAM) software under a single IMC platform instance
- **Endpoint identity**
provides identification of all endpoints across the network with centralized access policies[†] the module leverages existing user directories and groups, including support for Active Directory, LDAP, and RADIUS[†] in addition to user name credentials, smart card and certificate authentication are also supported[†] an administrator can set devices/users into roles for specifying access levels[†] in addition, UAM administrators can be assigned to set policies only for specific roles
- **Device fingerprinting**
network-agnostic device fingerprinting capabilities based on HTTP+MAC+DHCP device recognition
- **Auto-MAC registration**
Simple Network Access Control (SNAC) enhanced with auto-MAC registration capabilities
- **Integration of device and user management**
administrators can view users by different categories, such as location (access device), improving troubleshooting and reporting, as well as select a device and perform access operations like dropping a user[†] any online user can view the details (e.g., alarms, performance) of the access device, reducing help desk calls[†] integrating network device and user data into a common interface reduces deployment and aids in both device and user management

Overview

- **Multiple access authentication modes**

UAM software supports authentication modes like 802.1X, VPN, portal, and wireless access identity modes like PAP, CHAP, EAP-MD5, EAP-TLS, and PEAP to fit into applications with different security requirements—access users can be bound with the hardware information, such as device IP address, access port, VLAN, user IP address, and user MAC address—this helps ensure secure authentication and prevents account spoofing and illegal access
- **Various rights control measures for stricter access control**

policies can be time or location specific, as well as include bandwidth limitations or a set number of concurrent user sessions—the system can be used to prevent IP spoofing and address conflicts—to prevent the spread of corporate information without permission, administrators can disable the use of multiple NICs or dial-up networks, and monitor or block access to USB or CD drives
- **Intensive user monitor**

the powerful blacklist management function helps administrators blacklist users who have made malicious login attempts and track the MAC/IP addresses of such users—administrators can monitor online users in real time and prohibit unauthorized users from having access—authentication failures are logged for analysis—in addition, administrators can send messages to online users to provide notifications of such things as pending disconnections for system updates
- **Flexible adjustment of service and environmental parameters**

the system parameter, the policy service parameter, the running parameter, the certificate authentication parameters, the user prompt, the client autorun task, and the password strategy can all be configured
- **Integrated access device management**

the access device configuration can interact with the IMC ACL manager for fast deployment of user access services—the access devices come with links to their details, including the basic information, alarms, and performance—administrators can view such information by simple clicks—in a topology, administrators can clearly see the included access devices, view their information, or click to set an access device to non-access
- **Selective deployment**

UAM software has multiple features to ease deployment and provide high scalability, including the ability to preconfigure and deploy 802.1X supplicant settings and leverage the IMC platform to configure access devices—IMC software can aid in phasing implementations by location, users, and enforcement levels, including different modes such as monitor, alert, and isolate, to allow an organization to enable access control features when appropriate
- **Enhanced user account and device administrator management**

multilanguage user accounts are now supported—Active Directory (AD) support includes on-demand synchronization of user accounts based on AD groups and user authentication against AD—UAM software provides a configuration wizard for portal authentication and PEAP authentication against AD—charts for monitoring UAM status can now be customized
- **IPv6 support for portal authentication**

UAM and EAD modules now support the IPv6 protocol stack
- **Troubleshooting tools for user authentication**

makes troubleshooting user authentication issues in the UAM module easier—it logs details of the user authentication process and displays relevant information on the Web page—with this tool, administrators can trace detailed information of users who try to access the network
- **Simple Network Access Control**

the Simple Network Access Control (SNAC) solution provides easy-to-use MAC-based authentication with self-registration, requiring minimal administrative overhead—users can register the MAC address of their devices to the UAM software the first instance they connect to the network—thereafter, MAC authentication will be automatically performed by the access devices
- **eAPI for UAM**

a restful API for the UAM software module has been provided
- **Enhancement of LDAP authentication**

an LDAP user can pre-register an access user account in the UAM software—the user group could also be synchronized with the LDAP server and be based on the organizational unit (OU) in the LDAP server—the service applied to an LDAP user could then be based on the priority of OU defined by the administrator
- **SMS support for sending guest user credentials**

when a guest user account is created, the credentials may be sent to the user by an SMS text message
- **Enhanced IMC iNode client**

the IMC iNode client supports IPv6, and IEEE 802.1X authentication in wireless scenarios

Warranty and support

- **Electronic and telephone support**

limited electronic and business-hours telephone support is available from HP for the entire warranty period—to reach our



Overview

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

Technical Specifications

HP IMC User Access Manager Software Module with 50-user E-LTU (JG752AAE)

Minimum system hardware	Different hardware will be required depending on the number of users. Intel® Pentium® 4 3.0 GHz processor 4 GB RAM memory 50 GB storage 10/100 MB NIC
Recommended system hardware	3.0 GHz Intel® Xeon® or Intel® Core™2 Duo processor or equivalent processor 4 GB RAM memory 100 GB storage 1000 MB NIC
Recommended software	Windows® Server 2003 with Service Pack 2 Windows® Server 2003 X64 with Service Pack 2 and KB942288 Windows® Server 2003 R2 with Service Pack 2 Windows® Server 2003 R2 X64 with Service Pack 2 with KB942288 Windows® Server 2008 with Service Pack 2 Windows® Server 2008 X64 with Service Pack 2 Windows® Server 2008 R2 with Service Pack 1 Windows® Server 2008 R2 X64 with Service Pack 1 Red Hat Enterprise Linux 5 Red Hat Enterprise Linux 5 X64 Red Hat Enterprise Linux 5.5 Red Hat Enterprise Linux 5.5 X64 Red Hat Enterprise Linux 6.1 X64
Browsers	Firefox 3.6 or later is recommended Internet Explorer 8.0 or later is recommended
Additional requirements	An array controller or RAID card is needed—Dual-Channel Ultra 320 SCSI card array controller or higher configuration, with a cache of 128 MB or more—supporting RAID 0, 1, 1+0, and 5.
Notes	EAD and UAM are installed with platform on the same server. One server's managed user size can range from 1 user to 50,000 users. If there are more than 10,000 users, an array controller or RAID card is needed—Dual-Channel Ultra 320 SCSI card array controller or higher configuration, with a cache of 192 MB—supporting RAID 0, 1, 1+0, and 5. Database can be Oracle 11g Enterprise Edition or Microsoft® SQL Server 2005/2008.
Services	3-Year, 9x5 SW phone support, software updates (UV740E) 3-year, 24x7 SW phone support, software updates (UV741E) 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 IMC User Access Management Software accessories

License

HP IMC User Access Manager Software Module Additional 50-user E-LTU

JG753AAE

Technical Specifications

To learn more, visit www.hp.com/networking

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Overview

Models

HP IMC Service Health Manager Software Module E-LTU

JG398AAE

Key features

- Predefined and custom KPIs
- Visual service modeling
- Complete NQA link monitoring
- Comprehensive SHM reports

Product overview

HP Intelligent Management Center (IMC) is a modular, comprehensive resource management platform. With its extensive device support, IMC provides true end-to-end management for the entire network, as well as the entire operation cycle. IMC Service Health Manager (SHM) is an IMC module that provides end-to-end service monitoring and service assurance through the visualization of infrastructure or network variance/factors that are in the service path.

SHM leverages data derived from other IMC components to yield critical performance metrics. SHM then aggregates key performance indicators (KPIs) to generate key quality indicator (KQI) metrics.

KQIs can be modeled to provide a visual representation of service-level agreement (SLA) obligations. With SHM, administrators can visually determine the level of quality for defined services and take proactive measures to maintain SLAs.

Features and benefits

Management

- **Predefined KPIs and custom KPIs**
 - **Comprehensive KPI collecting**
predefines five KPIs (device monitoring, interface monitoring, NQA voice, NQA link, and NTA traffic) by extracting the KPI indexes from all IMC modules (including platform traps, performance, NQA, and NTA) to realize metered definitions of network performance
 - **Predefine abundant KQIs**
allows you to predefine different KQIs, including device status, interface performance, NQA voice and link quality, and NTA host traffic
- **Visual service modeling**
provides visual SLA modeling tools) allows you to define the service-related resources, set up a KQI/compound KQI, and then create evaluation policies to obtain a holistic view of the service
- **Complete network quality assurance (NQA) link monitoring**
 - **Comprehensive service quality monitoring**
monitors delay)jitter)packet loss)and throughput of different services, including voice, video, network connectivity, and VRF
 - Multivendor device management
 - Support for NQA grouping based on service types
- **Real-time monitoring, audit, and alarm of NQA instances**
 - Instant management is the core function of NQA and allows you to configure test period, alarm mode, service level, service class, and device parameter through instant management
 - The real-time audit function helps solve problems when the configured instance cannot collect data normally
 - The threshold values for alarms
- **Comprehensive SHM reports**
includes daily, weekly, monthly, and annual service health monitoring reports

Technical Specifications

HP IMC Service Health Manager Software Module E-LTU (JG398AAE)

Minimum system hardware	Operating environment requires client/server architecture server requirements are listed below Intel® Pentium® 4 3.0 GHz processor 2 GB RAM memory 100 GB storage 1000 MB NIC
Recommended system hardware	3.0 GHz Intel® Xeon® or Intel® Core™2 Duo processor or equivalent processor 4 GB RAM memory 200 GB storage 1000 MB NIC
Recommended software	Windows® Server 2003 with Service Pack 2 Windows® Server 2003 X64 with Service Pack 2 and KB942288 Windows® Server 2003 R2 with Service Pack 2 Windows® Server 2003 R2 X64 with Service Pack 2 with KB942288 Windows® Server 2008 with Service Pack 2 Windows® Server 2008 X64 with Service Pack 2 Windows® Server 2008 R2 with Service Pack 1 Windows® Server 2008 R2 X64 with Service Pack 1 Red Hat Enterprise Linux 5 Red Hat Enterprise Linux 5 X64 Red Hat Enterprise Linux 5.5 Red Hat Enterprise Linux 5.5 X64 Red Hat Enterprise Linux 6.1 X64
Minimum system hardware	Client requirements Intel® Pentium® 4 2.0 GHz processor 1 GB RAM memory 20 GB storage 1000 MB NIC
Recommended system hardware	2.0 GHz Intel® Pentium® III or equivalent processor 1 GB RAM memory 20 GB storage 1000 MB NIC
Recommended software	Microsoft® Windows® XP
Additional requirements	Database—Microsoft® SQL Server 2005 Service Pack 3 (Windows only), Microsoft SQL Server 2008 Service Pack 3 (Windows only), Microsoft SQL Server 2008 Service Pack 3 (64-bit—Windows 64-bit only), Microsoft SQL Server 2008 R2 Service Pack 1 (Windows only), Microsoft SQL Server 2008 R2 Service Pack 1 (64-bit—Windows only), Oracle 11g Release 1 (Linux only), Oracle 11g Release 2 (Linux only), Oracle 11g Release 2 (64-bit—Linux only)
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.

To learn more, visit www.hp.com/networking

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Overview

Models

HP IMC Application Performance Manager Software Module with 25-monitor E-LTU

JG489AAE

Key features

- Application health and performance monitoring
- Automatic discovery of applications
- Fault management for monitored applications
- Comprehensive reporting of monitored objects

Product overview

HP Intelligent Management Center (IMC) is a modular, comprehensive resource management platform. With its extensive device support, IMC provides true end-to-end management for the entire network, as well as the entire operation cycle.

HP IMC Application Performance Manager (APM) Software is an IMC module that allows administrators to visualize and measure the health of critical business applications and their impact on network performance. With the available data, you can easily determine which business process is affected and which application issues to prioritize—all leading to quick and effective troubleshooting. The comprehensive monitoring and management that APM provides includes fault management, and performance monitoring of application servers, servers, and databases. Applications can easily be discovered by APM, and administrators can be informed of application issues through generated alarms. As with many of IMC modules, APM provides comprehensive reporting features.

Features and benefits

Management

- **Flexible deployment architecture**
leverages two mechanisms to monitor and manage applications—agent and agentless—the agent is installed on servers to provide feedback to IMC, while the agentless mechanism uses CLI/telnet for monitoring servers
- **Comprehensive monitoring functions**
monitors all kinds of applications and servers, including the following—Apache/IIS Web servers, Microsoft® .NET/JBoss/Tomcat servers, operating systems, databases, email servers, and network services—provides a global view for the entire service infrastructure—adds the Linux/UNIX® application monitoring indexes, including the system version, inode, zombie process, session information, and volume group
- **Troubleshooting and analysis**
includes several tools to help administrators identify issues quickly and equip administrators to address problems by providing root cause analysis—administrators can set threshold values for monitored parameters—alarms are generated if the set value exceeds the threshold
- **Comprehensive reporting**
all monitored data is available for reporting—reports can be generated at specified intervals and can be output in a variety of formats
- **Resource manager and network topology**
provides integrated application and network management

Technical Specifications

HP IMC Application Performance Manager Software Module with 25-monitor E-LTU (JG489AAE)

For 250 application monitors

Minimum system hardware

4.30 GHz Intel® Pentium® or equivalent processor
8 GB RAM memory
150 GB storage

Recommended software

Windows® Server 2003 with Service Pack 2
Windows® Server 2003 X64 with Service Pack 2 and KB942288
Windows® Server 2003 R2 with Service Pack 2
Windows® Server 2003 R2 X64 with Service Pack 2 with KB942288
Windows® Server 2008 with Service Pack 2
Windows® Server 2008 X64 with Service Pack 2
Windows® Server 2008 R2 with Service Pack 1
Windows® Server 2008 R2 X64 with Service Pack 1

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.

Accessories

HP IMC Application Performance Manager Software accessories

License	HP IMC Application Manager Software Module Additional 25-monitor E-LTU	JG763AAE
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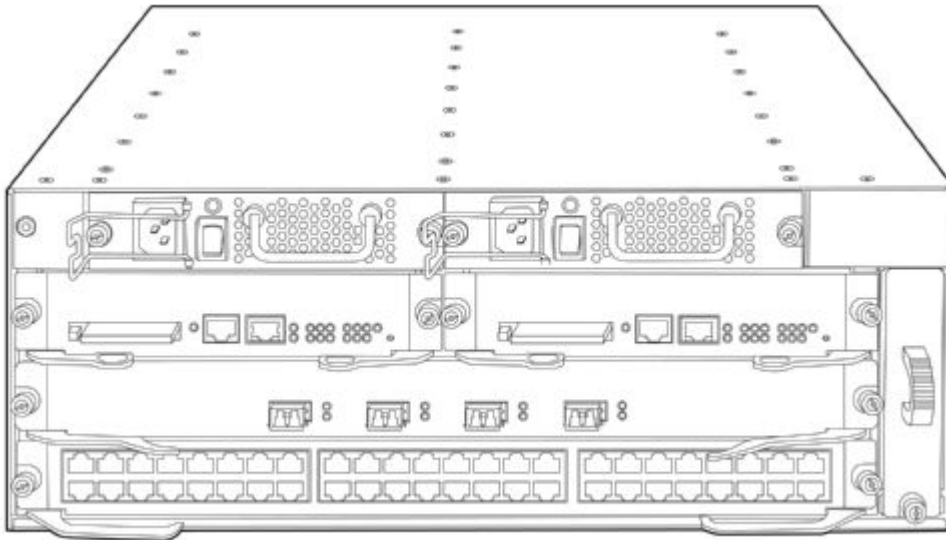
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Overview

Product overview

The HP 7500 Switch Series comprises modular, multilayer chassis switches that meet the evolving needs of integrated services networks and can be deployed in multiple network environments, including the enterprise LAN core, aggregation layer, and wiring closet edge. The series switches offer 40 GbE connectivity and cost-effective, wire-speed 10-Gigabit Ethernet ports to safeguard the throughput and bandwidth needed for your mission-critical data and high-speed communications. A passive backplane, support for load sharing, and redundant management and fabrics help the series provide high availability. Moreover, these switches deliver wire-speed Layer 2 and Layer 3 routing services for the most demanding applications with hardware-based IPv4 and IPv6 support.



HP 7502 Switch Chassis

Key features

- Versatile, high-performance modular switches
- Enterprise LAN core, aggregation, and edge
- Extensive switching and routing, IPv6, MPLS
- Advanced functionality with service modules
- Robust network and service virtualization

Features and benefits

Quality of Service (QoS)

- **IEEE 802.1p prioritization**—delivers data to devices based on the priority and type of traffic
- **Class of Service (CoS)**—sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Bandwidth shaping**
 - **Port-based rate limiting**—provides per-port ingress-/egress-enforced 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
- **Weighted random early detection (WRED)/random early detection (RED)**—delivers congestion avoidance capabilities through the use of queue management algorithms
- **Powerful QoS feature**—supports the following congestion actions—strict priority (SP) queuing, weighted round robin (WRR), weighted fair queuing (WFQ), and WRED
- **Traffic policing**—supports Committed Access Rate (CAR) and line rate

Overview

Intrusion detection/prevention system (IDS/IPS)

- **Deep packet inspection**—module supports deep packet inspection and examines the packet payload as well as the frame and packet headers—packets are dropped if attacks or intrusions are detected using signature-based or protocol anomaly-based detection
- **Signature-based detection**—detects attacks that have known attack patterns—IPS maintains a signature database that contains the pattern definitions for known attacks that can be automatically updated using a subscription service
- **Protocol anomaly-based detection**—detects attacks that use anomalies in application protocol payloads
- **Severity-based action policies**—involve action taken against attacks based on their severity—available actions are Allow, Block, and Terminate connection to provide appropriate mitigation
- **Signature update service**—provides regular updates to the signature database, helping to ensure that the latest available signatures are installed

Virtual private network (VPN)

- **IPSec**—provides secure tunneling over an untrusted network such as the Internet or a wireless network—offers data confidentiality, authenticity, and integrity between two network endpoints
- **Generic Routing Encapsulation (GRE)**—transports Layer 2 connectivity over a Layer 3 path in a secured way—enables the segregation of traffic from site to site
- **Manual or automatic Internet Key Exchange (IKE)**—provides both manual or automatic key exchange required for the algorithms used in encryption or authentication—auto-IKE allows automated management of the public key exchange, providing the highest levels of encryption

Management

- **Management interface control**—provides management access through a modem port and terminal interface, as well as in-band and out-of-band Ethernet ports—provides access through terminal interface, telnet, or secure shell (SSH)
- **Industry-standard CLI with a hierarchical structure**—reduces training time and expenses, and increases productivity in multivendor installations
- **Management security**—restricts access to critical configuration commands—offers multiple privilege levels with password protection—ACLs provide telnet and SNMP access—local and remote syslog capabilities allow logging of all access
- **SNMPv1, v2, and v3**—provide complete support of SNMP—provide full support of industry-standard Management Information Base (MIB) plus private extensions—SNMPv3 supports increased security using encryption
- **Web management**—embedded HTML management tool with secure access (SSHv2)
- **sFlow (RFC 3176)**—provides scalable ASIC-based wirespeed network monitoring and accounting with no impact on network performance—this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **Remote monitoring (RMON)**—uses standard SNMP to monitor essential network functions—supports events, alarm, history, and statistics group plus a private alarm extension group
- **FTP, TFTP, and SFTP support**—offers different mechanisms for configuration updates—FTP allows bidirectional transfers over a TCP/IP network—trivial FTP (TFTP) is a simpler method using User Datagram Protocol (UDP)—Secure File Transfer Protocol (SFTP) runs over an SSH tunnel to provide additional security
- **Debug and sampler utility**—supports ping and traceroute for both IPv4 and IPv6
- **Network Time Protocol (NTP)**—synchronizes timekeeping among distributed time servers and clients—keeps timekeeping consistent among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time
- **Network Quality Analyzer (NQA)**—analyzes network performance and service quality by sending test packets, and provides network performance and service quality parameters such as jitter, TCP, or FTP connection delays and file transfer rates—allows a network manager to determine overall network performance and to diagnose and locate network congestion points or failures
- **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
- **Dual flash images**—provide independent primary and secondary operating system files for backup while upgrading
- **Multiple configuration files**—can be stored to the flash image

Connectivity

-



Overview

- **High-density port connectivity**—up to 10 interface module slots—up to 40 40-GbE ports, 84 10GbE ports, 480 Fiber Gigabit ports, or 480 PoE-enabled ports per HP 7500 series system
- **Jumbo frames**—up to 9216 bytes allow high-performance backups and disaster-recovery systems
- **Loopback**—supports internal loopback testing for maintenance purposes and an increase in availability—loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port or per-VLAN basis for added flexibility
- **Ethernet operations, administration and maintenance (OAM)**—detects data link layer problems that occurred in the last mile—using the IEEE 802.3ah OAM standard—monitors the status of the link between two devices
- **Flexible port selection**—includes 100/1000BASE-X auto speed selection, 10/100/1000BASE-T auto speed detection, plus auto duplex and MDI/MDI-X
- **Monitor link**—collects statistics on performance and errors on physical links, increasing system availability
- **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
- **Dual-personality functionality**—includes four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX
- **Packet storm protection**—protects against unknown broadcast, unknown multicast, or unicast storms with user-defined thresholds
- **Flow control**—provides back pressure using standard IEEE 802.3x, reducing congestion in heavy traffic situations
- **IEEE 802.3at Power over Ethernet (PoE+) support**—provides up to 30 watts of power at the power sourcing equipment (PSE)

Performance

- **High-speed fully distributed architecture**
 - 2.4 Tbps backplane supports maximum 1152 Gbps switching capacity, providing enhanced performance and future expansion capability—with dual fabrics, the switch delivers up to 714 Mpps throughput
 - All switching and routing is performed in the I/O modules
 - Meets current and future demand of an enterprise's bandwidth-intensive applications
- **Scalable system design**—backplane is designed for bandwidth increases—provides investment protection to support future technologies and higher-speed connectivity
- **Flexible chassis selection**—enables customers to tailor their product selection to their budgets, with a choice of six chassis, ranging from a 10-slot to a 2-slot chassis

Resiliency and high availability

- **Redundant/Load-sharing fabrics, management, fan assemblies, and power supplies**—increase total performance and power available while providing hitless, stateful failover
- **All modules are hot-swappable**—allows replacement of modules without any impact on other modules
- **Dual internal power supply**—provides high reliability
- **Separate data and control paths**—keep control separated from services and keep service processing isolated—increase security and performance
- **Passive design system**—backplane has no active components for increased system reliability
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP)**—supports up to 128 trunks, each with 8 links per trunk—supports static or dynamic groups and user-selectable hashing algorithm
- **Intelligent Resilient Framework (IRF)**—creates virtual resilient switching fabrics, where two or more switches perform as a single L2 switch and L3 router—switches do not have to be co-located and can be part of a disaster-recovery system—servers or switches can be attached using standard LACP for automatic load balancing and high availability—can eliminate the need for complex protocols like Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP, thereby simplifying network operation—simplifies network operation by eliminating the complexity of Spanning Tree Protocol, Equal-Cost Multipath (ECMP), or VRRP
- **IRF capability**—provides single IP address management for a resilient virtual switching fabric of up to four switches
- **Rapid Ring Protection Protocol (RRPP)**—provides standard sub-100 ms recovery for ring Ethernet-based topology
- **Virtual Router Redundancy Protocol (VRRP)**—allows a group of routers to dynamically back each other up to create highly available routed environments
- **Hitless patch upgrades**—allow patches and new service features to be installed without restarting the equipment, increasing network uptime and facilitating maintenance
- **Graceful restart**—features are fully supported, including graceful restart for OSPF, IS-IS, BGP, LDP, and RSVP—the network remains stable during the active-standby switchover—after the switchover, the device quickly learns the network routes by communicating with adjacent routers—forwarding remains uninterrupted during the switchover to achieve nonstop forwarding

Overview

(NSF)

- **Ultrafast protocol convergence with standards-based failure detection**—Bidirectional Forwarding Detection (BFD) enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, MPLS, and IRF
- **Smart link**—allows 50 ms failover between links
- **IP/LDP FRR**—nodes are configured with backup ports, routes, and LSPs—local implementation requires no cooperation of adjacent devices, simplifying the deployment—solves the traditional convergence faults in IP forwarding and MPLS forwarding, protecting the links, nodes, and paths without establishing respective backup LSPs for them—realizes restoration within 50 ms, with the restoration time independent of the number of routes and fast link switchovers, without route convergence

Layer 2 switching

- **VLAN**—supports up to 4,096 ports or IEEE 802.1Q-based VLANs—also supports MAC-based VLANs, protocol-based VLANs, and IP-subnet-based VLANs for added flexibility
- **Port isolation**—increases security by isolating ports within a VLAN while still allowing them to communicate with other VLANs
- **Bridge Protocol Data Unit (BPDU) tunneling**—transmits Spanning Tree Protocol BPDUs transparently, allowing correct tree calculations across service providers, WANs, or MANs
- **GARP VLAN Registration Protocol**—allows automatic learning and dynamic assignment of VLANs
- **Port mirroring**—duplicates port traffic (ingress and egress) to a local or remote monitoring port—supports four mirroring groups, with an unlimited number of ports per group
- **Spanning Tree Protocol (STP)**
fully supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) protocol snooping**—effectively control and manage the flooding of multicast packets in a Layer 2 network
- **Device Link Detection Protocol (DLDP)**—monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks
- **IEEE 802.1ad QinQ and Selective QinQ**—increase the scalability of an Ethernet network by providing a hierarchical structure—connect multiple LANs on a high-speed campus or metro network
- **Super VLAN**—RFC 3069 standard, also called VLAN aggregation, is used to save IP address space
- **Per-VLAN Spanning Tree Plus (PVST+)**—allows each VLAN to build a separate spanning tree to improve link bandwidth usage in network environments where multiple VLANs exist

Layer 3 services

- **Address Resolution Protocol (ARP)**—determines the MAC address of another IP host in the same subnet—supports static ARPs—gratuitous ARP allows detection of duplicate IP addresses—proxy ARP allows normal ARP operation between subnets or when subnets are separated by a Layer 2 network
- **User Datagram Protocol (UDP) helper**—redirects UDP broadcasts to specific IP subnets to prevent server spoofing
- **Dynamic Host Configuration Protocol (DHCP)**—simplifies the management of large IP networks and supports client and server—DHCP Relay enables DHCP operation across subnets
- **Domain Name System (DNS)**—provides a distributed database that translates domain names and IP addresses, which simplifies network design—supports client and server

Layer 3 routing

- **Static IPv4 routing**—provides simple manually configured IPv4 routing
- **Routing Information Protocol (RIP)**—uses a distance vector algorithm with UDP packets for route determination—supports RIPv1 and RIPv2 routing—includes loop protection
- **Open Shortest Path First (OSPF)**
delivers faster convergence—uses this link-state routing Interior Gateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Intermediate system to intermediate system (IS-IS)**—uses a path vector Interior Gateway Protocol (IGP), which is defined by the ISO organization for IS-IS routing and extended by IETF RFC 1195 to operate in both TCP/IP and the OSI reference model (Integrated IS-IS)
- **Border Gateway Protocol 4 (BGP-4)**—delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors—uses TCP for enhanced reliability for the route discovery process—reduces bandwidth consumption by advertising only incremental updates—supports extensive policies for increased flexibility—scales to very large networks

Overview

- **Policy-based routing**—makes routing decisions based on policies set by the network administrator
- **IP performance optimization**—is a set of tools to improve the performance of IPv4 networks—includes directed broadcasts, customization of TCP parameters, support of ICMP error packets, and extensive display capabilities
- **Unicast Reverse Path Forwarding (uRPF)**—is defined by RFC 3704 and limits erroneous or malicious traffic
- **Static IPv6 routing**—provides simple manually configured IPv6 routing
- **Dual IP stack**—maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
- **Routing Information Protocol next generation (RIPng)**—extends RIPv2 to support IPv6 addressing
- **OSPFv3**—provides OSPF support for IPv6
- **IS-IS for IPv6**—extends IS-IS to support IPv6 addressing
- **BGP+**—extends BGP-4 to support Multiprotocol BGP (MBGP), including support for IPv6 addressing
- **IPv6 tunneling**—allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet—supports manually configured, 6to4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels—is an important element for the transition from IPv4 to IPv6
- **Multiprotocol Label Switching (MPLS)**—uses BGP to advertise routes across Label Switched Paths (LSPs), but uses simple labels to forward packets from any Layer 2 or Layer 3 protocol, thus reducing complexity and increasing performance—supports graceful restart for reduced failure impact—supports LSP tunneling and multilevel stacks
- **Multiprotocol Label Switching (MPLS) Layer 3 VPN**—allows Layer 3 VPNs across a provider network—uses MP-BGP to establish private routes for increased security—supports RFC 2547bis multiple autonomous system VPNs for added flexibility
- **Multiprotocol Label Switching (MPLS) Layer 2 VPN**—establishes simple Layer 2 point-to-point VPNs across a provider network using only MPLS Label Distribution Protocol (LDP)—requires no routing and therefore decreases complexity, increases performance, and allows VPNs of non-routable protocols—uses no routing information for increased security—supports Circuit Cross Connect (CCC), Static Virtual Circuits (SVCs), Martini draft, and Kompella-draft technologies
- **Virtual Private LAN Service (VPLS)**—establishes point-to-multipoint Layer 2 VPNs across a provider network
- **Service loopback**—allows any module to take advantage of higher-featured modules, including OAA modules, by redirecting traffic—reduces investment and enables higher bandwidth and load sharing—supports IPv6, IPv6 multicast, tunneling, and MPLS

Security

- **Access control list (ACL)**—supports powerful ACLs for both IPv4 and IPv6—ACLs are used for filtering traffic to prevent unauthorized users from accessing the network, or for controlling network traffic to save resources—rules can either deny or permit traffic to be forwarded—rules can be based on a Layer 2 header or a Layer 3 protocol header—rules can be set to operate on specific dates or times
- **Remote Authentication Dial-In User Service (RADIUS)**
eases switch security access administration by using a password authentication server
- **Terminal Access Controller Access-Control System (TACACS+)**
is an authentication tool using TCP with encryption of the full authentication request that provides additional security
- **Switch management logon security**—helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
- **Secure Shell (SSHv2)**—uses external servers to securely log in to a remote device—with authentication and encryption, it protects against IP spoofing and plain-text password interception—increases the security of Secure FTP (SFTP) transfers
- **Dynamic Host Configuration Protocol (DHCP) snooping**—ensures DHCP clients receive IP addresses from authorized DHCP servers and maintains a list of DHCP entries for trusted ports—prevents users from receiving fake IP addresses and reduces ARP attacks, improving security
- **IP source guard**—filters packets on a per-port basis to prevent illegal packets from being forwarded
- **ARP attack protection**—protects from attacks using a large number of ARP requests with a host-specific, user-selectable threshold
- **Port security**—allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **IEEE 802.1X support**
provides port-based user authentication with support for Extensible Authentication Protocol (EAP) MD5, TLS, TTLS, and PEAP with choice of AES, TKIP, and static or dynamic WEP encryption for protecting wireless traffic between authenticated clients and the access point
- **Media access control (MAC) authentication**—provides simple authentication based on a user's MAC address—supports local or RADIUS-based authentication
- **Multiple user authentication methods**—
 - **IEEE 802.1X**—is an industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in

Overview

- conjunction with a RADIUS server
- **Web-based authentication**—is similar to IEEE 802.1X and provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
- **MAC-based authentication**—authenticates the client with the RADIUS server based on the client's MAC address
- **DHCP protection**—blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Endpoint Admission Defense (EAD)**—provides security policies to users accessing a network
- **Port isolation**—secures and adds privacy, and prevents malicious attackers from obtaining user information

Convergence

- **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
- **Multicast Source Discovery Protocol (MSDP)**—is used for inter-domain multicast applications, allowing multiple PIM-SM domains to interoperate
- **Internet Group Management Protocol (IGMP)**—is used by IP hosts to establish and maintain multicast groups—supports IGMPv1, v2, and v3—utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks
- **Protocol Independent Multicast (PIM)**—is used for IPv4 and IPv6 multicast applications—supports PIM Dense Mode (PIM-DM), Sparse Mode (PIM-SM), and Source-Specific Mode (PIM-SSM)
- **Multicast Border Gateway Protocol (MBGP)**—allows multicast traffic to be forwarded across BGP networks and kept separate from unicast traffic
- **Multicast Listener Discovery (MLD) protocol**—is used by IP hosts to establish and maintain multicast groups—supports v1 and v2 and utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv6 multicast networks
- **Multicast VLAN**—allows multiple VLANs to receive the same IPv4 or IPv6 multicast traffic, reducing network bandwidth demand by eliminating multiple streams to each VLAN
- **Voice VLAN**—automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance

Integration

- **Open Application Architecture (OAA)**
provides high-performance application-specific modules fully integrated with the switching architecture—uses the chassis high-speed backplane to access network-related data—increases performance, reduces costs, and simplifies network management
- **Load-balancing module**
local and global server load-balancing module improves traffic distribution using powerful scheduling algorithms, including Layer 4 to 7 services—monitors the health status of servers and firewalls
- **NetStream module**—provides traffic analysis and statistics capture to allow network administrators to rapidly identify network anomalies and security threats, as well as capacity planning information—supports NetFlow v5 and v9
- **Unified wired-WLAN module**
supports up to 1,024 access points per module—is for use with selected HP APs (see the HP 10500/7500 20G Unified Wired-WLAN Module data sheet for specifics)—provides N+1, N+N, and 1+1 redundancy offering subsecond failover—provides IPv4/IPv6 and end-to-end QoS—includes flexible forwarding modes, as well as Wi-Fi Clear Connect Radio Frequency (RF) optimization and integrated IDS
- **VPN 20 Gbps firewall module**
provides enhanced stateful packet inspection and filtering—supports flexible security zones and virtual firewall containment—advanced VPN services with 3DES and AES encryption at high performance and low latency—Web content filtering—application prioritization and optimization

Additional information

- **Green initiative support**
provides support for RoHS and WEEE regulations
- **Low power consumption**
is rated among the lowest in power consumption in the industry by Miercom independent tests
- **Unified HP Comware operating system with modular architecture**
all switching, routing, and security platforms leverage the Comware OS, a common unified modular operating system—provides an easy-to-enhance-and-extend feature set without wholesale changes
- **OPEX savings**

Overview

are delivered through the use of a common operating system that simplifies and streamlines deployment, management, and training, thereby cutting costs as well as reducing the chance for human errors associated with having to manage multiple operating systems across different platforms and network layers

Warranty and support

- **1-year Warranty 2.0**

advance hardware replacement with 10-calendar-day delivery (available in most countries)

- **Electronic and telephone support (for Warranty 2.0)**

limited electronic and 24x7 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

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 7502 Switch Chassis	JD242B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 4U - Height 	
HP 7503 Switch Chassis	JD240B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 10U - Height 	
HP 7503-S Switch Chassis w/1 Fabric Slot	JD243B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 4U - Height 	
HP 7503 Swch w/48p GT 2p 10G 384Gbps MPU	JG507A
<ul style="list-style-type: none"> • Must select min 1 Power Supply • 1 - JD193B - HP 384 Gbps A7500 Fab Mod w/2 XFP Ports included min=0 \ max=2 XFP Transceivers • 1 - JD229B - HP 48p Gig-T PoE+ Ext A7500 Module included • 4U - Height 	
HP 7506 Switch Chassis	JD239B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 13U - Height 	
HP 7506 Swch w/96p GT 2p 10G 384Gbps MPU	JG508A
<ul style="list-style-type: none"> • Must select min 1 Power Supply • 1 - JD193B - HP 384 Gbps A7500 Fab Mod w/2 XFP Ports included min=0 \ max=2 XFP Transceivers • 1 - JD229B - HP 48p Gig-T PoE+ Ext A7500 Module included • 13U - Height 	
HP 7506-V Switch Chassis	JD241B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 21U - Height 	
HP 7510 Switch Chassis	JD238B
<ul style="list-style-type: none"> • Must select min 1 Power Supply • Must select Min 1 Fabric Module • 16U - Height 	
HP 7510 Swch w/96p GT 768Gbps MPU	JG509A
<ul style="list-style-type: none"> • Must select min 1 Power Supply • 1 - JD220A - HP 384 Gbps A7500 Fab Mod w/2 XFP Ports included min=0 \ max=2 XFP Transceivers • 1 - JD229B - HP 48p Gig-T PoE+ Ext A7500 Module included • 16U - Height 	

Remarks BTO Model 1s should never receive an OD1 and therefore can not be factory integrated into a rack.

Configuration

Box Level Integration CTO Models

HP 75xx CTO Switch Solution	JG707A
<ul style="list-style-type: none"> SSP trigger sku 	
HP 7502 Switch Chassis CTO	JD242B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 4U - Height 	See Configuration Note= 2,3
HP 7503 Switch Chassis - CTO	JD240B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 10U - Height 	See Configuration Note= 3,4
HP 7503 Switch Chassis with 1 Fabric Slot - CTO	JD243B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 4U - Height 	See Configuration Note= 2,3
HP 7506 Switch Chassis - CTO	JD239B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 13U - Height 	See Configuration Note= 3,4
HP 7506 Vertical Switch Chassis - CTO	JD241B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 21U - Height 	See Configuration Note= 3,4
HP 7510 Switch Chassis - CTO	JD238B
<ul style="list-style-type: none"> Must select min 1 Power Supply Must select Min 1 Fabric Module 16U - Height 	See Configuration Note= 3,4

Configuration Rules=

Note 2	If this Switch is selected at least one of these Power Supply with is required=(Use #0D1 if switch is CTO)
	HP 7502 300W AC Power Supply JD226A
	HP 7500 650W DC Power Supply JD209A
	HP 7500 650W AC Power Supply JD217A
Note 3	If the Switch Chassis is to be Box Level Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the JG707A - HP 7500 CTO Enablement. (Min 1/Max 1 Switch per SSP)
Note 4	If this Switch is selected at least one of these Power Supplies is required=(Use #0D1 if switch is CTO)
	HP 7500 1400W DC Power Supply JD208A
	HP 7500 1400W AC Power Supply JD218A
	HP 7500 2800W AC Power Supply JD219A
	HP 7500 6000W AC Power Supply JD227A

Rack Level Integration CTO Models



Configuration

HP 7502 Switch Chassis

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 4U - Height

JD242B

See Configuration Note= 1, 3

HP 7503 Switch Chassis

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 10U - Height

JD240B

See Configuration Note= 3,4

HP 7503-S Switch Chassis w/1 Fabric Slot

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 4U - Height

JD243B

See Configuration Note= 1, 3

HP 7506 Switch Chassis

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 13U - Height

JD239B

See Configuration Note= 3,4

HP 7506-V Switch Chassis

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 21U - Height

JD241B

See Configuration Note= 3,4

HP 7510 Switch Chassis

- Must select min 1 Power Supply
- Must select Min 1 Fabric Module
- 16U - Height

JD238B

See Configuration Note= 3,4

Configuration rules=

Note 1	If this Switch is selected at least one of these Power Supply with is required=(Use #0D1 if switch is CTO) HP 7502 300W AC Power Supply HP 7500 650W AC Power Supply HP 7500 650W AC Power Supply	JD226A JD209A JD217A
Note 3	If HP CTO Switch Chassis is selected to be Rack Level Integration, Then the CTO Switch Chassis needs to integrate (with #0D1) to the BW966A and BW968A HP Universal Rack Only. (Default to the BW966A.)	
Note 4	If this Switch is selected at least one of these Power Supplies is required=(Use #0D1 if switch is CTO) HP 7500 1400W DC Power Supply HP 7500 1400W AC Power Supply HP 7500 2800W AC Power Supply HP 7500 6000W AC Power Supply	JD208A JD218A JD219A JD227A

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

Internal Power Supplies

Configuration

System (std 0 // max 2) User Selection (min 1 // max 2)	See Configuration Note ³
HP 7502 300W AC Power Supply <ul style="list-style-type: none"> includes 1 x c13, 300w 	JD226A See Configuration Note ^{1,4}
PDU Cable NA/MEX/TW/JP <ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	#B2B
PDU Cable ROW <ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	#B2C
HP 7500 650W DC Power Supply	JD209A See Configuration Note ¹
HP 7500 650W AC Power Supply <ul style="list-style-type: none"> includes 1 x c13, 650w 	JD217A See Configuration Note ^{1,4,5}
PDU Cable NA/MEX/TW/JP <ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	#B2B
PDU Cable ROW <ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	#B2C
HP 7500 1400W DC Power Supply	JD208A See Configuration Note ²
HP 7500 1400W AC Power Supply <ul style="list-style-type: none"> includes 1 x c19, 1400w 	JD218A See Configuration Note ^{2,4}
PDU Cable NA/MEX/TW/JP <ul style="list-style-type: none"> C15 C19 PDU Jumper Cord (NA/MEX/TW/JP) 	JD218A#B2B
PDU Cable ROW <ul style="list-style-type: none"> C19 PDU Jumper Cord (ROW) 	JD218A#B2C
High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	JD218A#B2E
HP 7500 2800W AC Power Supply <ul style="list-style-type: none"> includes 2 x c19, 2800w 	JD219A See Configuration Note ^{2,4,6}
High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	#B2E

Configuration

HP 7500 6000W AC Power Supply	JD227A
<ul style="list-style-type: none"> includes 4 x c19, 6000w 	See Configuration Note=2,4,6
PDU Cable NA/MEX/TW/JP	JD227A#B2B
<ul style="list-style-type: none"> C15 C19 PDU Jumper Cord (NA/MEX/TW/JP) 	
High Volt Switch to Wall Power Cord	JD227A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	
High Volt Switch to Wall Power Cord	#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules⁻

Note 1	Only supported on the JD242x and JD243x.
Note 2	Only supported on the JD238x,JD239x,JD241x, JD240x, JG507A, JG508A, and JG509A.
Note 3	If 2 power supplies are selected they must be the same Sku number.
Note 4	Localization required on orders without #B2B, #B2C, #B2D or #B2E options.
Note 5	If CTO Switch Chassis is ordered #0D1 (Rack Integrated), 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 6	If the CTO Switch Chassis is ordered #0D1 (Rack Integrated), Then #B2D is Required on the Power Supply's. (Optional when Switch is not Factory Racked. See Drop down remark in Power Supplies section.)

Remarks⁻

Drop down under power supply should offer the following options and results⁻
 Switch 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 to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
 High Volt Power Electrical Module to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)

Modules

Ethernet Modules

(Switch JD243x and JD242x) System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure

(Switch JG507A) System (std 1 // max 2) User Selection (min 0 // max 1) per enclosure

(Switch JD240x) System (std 0 // max 3) User Selection (min 0 // max 3) per enclosure

(Switch JD239x and JD241x) System (std 0 // max 6) User Selection (min 0 // max 6) per enclosure



Configuration

(Switch JG508A) System (std 2 // max 6) User Selection (min 0 // max 4) per enclosure

(Switch JD238x) System (std 0 // max 10) User Selection (min 0 // max 10) per enclosure

(Switch JG509A) System (std 2 // max 10) User Selection (min 0 // max 8) per enclosure

HP 7500 24-port GbE SFP Module

- min=0 \ max=24 SFP Transceivers

JD203B

See Configuration Note¹

HP 7500 12-port GbE SFP Module

- min=0 \ max=12 SFP Transceivers

JD207A

See Configuration Note¹

HP 7500 48-port GbE SFP Enhanced Module

- min=0 \ max=48 SFP Transceivers

JD221A

See Configuration Note¹

HP 7500 24p GbE SFP Mod w/8 Combo Ports

- min=0 \ max=24 SFP Transceivers

JD223A

See Configuration Note¹

HP 7500 40p Gig-T/8p SFP PoE-ready Mod

- min=0 \ max= 8 SFP Transceivers

JD228B

See Configuration Note^{1, 8, 14}

HP 7500 24-port GbE SFP Enhanced Module

- min=0 \ max=24 SFP Transceivers

JD231A

See Configuration Note¹

HP 7500 24-port GbE SFP Extended Module

- min=0 \ max=24 SFP Transceivers

JD234A

See Configuration Note¹

HP 7500 48-port GbE SFP Extended Module

- min=0 \ max=48 SFP Transceivers

JD237A

See Configuration Note¹

HP 7500 48-port GbE SFP Module

- min=0 \ max=48 SFP Transceivers

JD211B

See Configuration Note¹

HP 7500 24-port GbE SFP SC TAA Module

- min=0 \ max=24 SFP Transceivers

JC704A

See Configuration Note^{1, 9}

HP A7500 40p Gig-T/8p SFP PoE SC TAA Mod

- min=0 \ max= 8 SFP Transceivers

JC710A

See Configuration Note^{1, 8, 9, 14}

HP A7500 16p GbE SFP/8p Combo EB TAA Mod

- min=0 \ max=24 SFP Transceivers

JC715A

See Configuration Note^{1, 9}



Configuration

<p>HP A7500 16p GbE SFP/8p Combo SD TAA Mod</p> <ul style="list-style-type: none"> min=0 \ max=24 SFP Transceivers 	<p>JC718A</p> <p>See Configuration Note^{1, 9}</p>
<p>HP 7500 48-port GbE SFP SD TAA Module</p> <ul style="list-style-type: none"> min=0 \ max=48 SFP Transceivers 	<p>JC721A</p> <p>See Configuration Note^{1, 9}</p>
<p>HP A7500 20p Gig-T/4p Cmb PoE-upg SC Mod</p> <ul style="list-style-type: none"> min=0 \ max= 4 SFP Transceivers 	<p>JC669A</p> <p>See Configuration Note^{1, 12}</p>
<p>HP 7500 48-port 100BASE-FX Module</p> <ul style="list-style-type: none"> min=0 \ max=48 SFP 100 Transceivers 	<p>JD197B</p> <p>See Configuration Note^{2, 7}</p>
<p>HP 7500 8-port 10G SFP+ Module</p> <ul style="list-style-type: none"> min=0 \ max=8 per SFP+ Transceivers 	<p>JF290A</p> <p>See Configuration Note³</p>
<p>HP 7500 8-port 10GbE SFP+ SC TAA Module</p> <ul style="list-style-type: none"> min=0 \ max=8 per SFP+ Transceivers 	<p>JC723A</p> <p>See Configuration Note^{3, 9}</p>
<p>HP 7500 4-port 10GbE XFP Enhanced Module</p> <ul style="list-style-type: none"> min=0 \ max=4 XFP 	<p>JD232A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 2-port 10GbE XFP Enhanced Module</p> <ul style="list-style-type: none"> min=0 \ max=2 XFP 	<p>JD233A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 8-port 10GbE XFP Extended Module</p> <ul style="list-style-type: none"> min=0 \ max=8 XFP Transceivers 	<p>JD191A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 2-port 10GbE XFP Module</p> <ul style="list-style-type: none"> min=0 \ max=2 XFP Transceivers 	<p>JD201A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 24p Gig-T / 2p 10GbE XFP Mod</p> <ul style="list-style-type: none"> min=0 \ max=2 XFP Transceivers 	<p>JD206A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 4-port 10GbE XFP Extended Module</p> <ul style="list-style-type: none"> min=0 \ max=4 XFP Transceivers 	<p>JD235A</p> <p>See Configuration Note⁴</p>
<p>HP 7500 2-port 10GbE XFP Extended Module</p> <ul style="list-style-type: none"> min=0 \ max=2 XFP Transceivers 	<p>JD236A</p> <p>See Configuration Note⁴</p>

Configuration

HP 7500 24p GbE SFP / 2p 10GbE XFP Mod <ul style="list-style-type: none"> min=0 \ max=2 XFP min=0 \ max=24 SFP Transceivers 	JD205A See Configuration Note-5
HP 7500 24p GbE-SFP/2p 10GbE XFP Ext Mod <ul style="list-style-type: none"> min=0 \ max=2 XFP min=0 \ max=24 SFP Transceivers 	JD230A See Configuration Note-5
HP 7500 24-port Gig-T Module <ul style="list-style-type: none"> No supported Transceivers 	JD204B
HP 7500 48-port Gig-T Module <ul style="list-style-type: none"> No supported Transceivers 	JD210A See Configuration Note-8,14
HP 7500 48p Gig-T PoE+ Extended Module <ul style="list-style-type: none"> Includes DIMM 	JD229B
HP 7500 48p 1000BASE-T PoE+ SC Mod <ul style="list-style-type: none"> No supported Transceivers 	JG663A
HP 7500 48p 1000BASE-T PoE+ SC TAA Mod <ul style="list-style-type: none"> No supported Transceivers 	JG664A
HP 7500 Load Balancing Module <ul style="list-style-type: none"> No supported Transceivers 	JD252A
HP 7500 NetStream Monitoring Module <ul style="list-style-type: none"> No supported Transceivers 	JD254A
HP 7500 SSL VPN Module w/500-user Lic <ul style="list-style-type: none"> No supported Transceivers 	JD253A
HP S1200N IPS A7500 Module <ul style="list-style-type: none"> No supported Transceivers 	JC527A
HP 7500 48-port 10/100BASE-T Module <ul style="list-style-type: none"> No supported Transceivers 	JD198B See Configuration Note-7, 8,14
HP 7500 48-port Gig-T PoE-ready Module <ul style="list-style-type: none"> min=0 \ max=2 SFP Transceivers 	JD199B See Configuration Note-7, 8,14
HP 7500 Advanced VPN Firewall Module <ul style="list-style-type: none"> min=0 \ max=2 SFP Transceivers 	JD249A See Configuration Note-13
HP 10500/11900/7500 20Gbps VPN FW Mod	JG372A

Configuration

- min=0 \ max=2 SFP Transceivers

See Configuration Note~13

HP 7500 4-port 40GbE QSFP+ SC Module

- min=0 \ max=4 QSFP+ Transceivers

JC792A

See Configuration Note~10

HP 7500 4-port 40GbE CFP SC Module

- min=0 \ max=4 CFP Transceivers

JG373A

See Configuration Note~11

HP 10500/7500 20G Unified Wired-WLAN Mod

- No supported Transceivers

JG639A

See Configuration Note~15

Configuration Rules~

Note 1

The following Transceivers install into this Module~(Use #0D1 if switch is CTO)

HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
HP X120 1G SFP LC LH100 Transceiver	JD103A
HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP RJ45 T Transceiver	JD089B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X120 1G SFP LC BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X110 100M SFP LC LH40 Transceiver	JD090A
HP X110 100M SFP LC LH80 Transceiver	JD091A
HP X110 100M SFP LC FX Transceiver	JD102B
HP X110 100M SFP LC LX Transceiver	JD120B
HP X110 100M SFP LC BX 10-U Transceiver	JD100A
HP X110 100M SFP LC BX 10-D Transceiver	JD101A

Note 2

The following Transceivers install into this Module~(Use #0D1 if switch is CTO)

HP X110 100M SFP LC LH40 Transceiver	JD090A
HP X110 100M SFP LC LH80 Transceiver	JD091A
HP X110 100M SFP LC FX Transceiver	JD102B
HP X110 100M SFP LC LX Transceiver	JD120B

Note 3

The following Transceivers install into this Module~(Use #0D1 or #B01 if switch is CTO)

HP X130 10G SFP+ LC SR Transceiver	JD092A
HP X130 10G SFP+ LC LRM Transceiver	JD093A
HP X130 10G SFP+ LC LR Transceiver	JD094A



Configuration

HP X240 10G SFP+ SFP+ 0.65m Direct Attach Copper Cable	JD095C
HP X240 10G SFP+ SFP+ 1.2m Direct Attach Copper Cable	JD096C
HP X240 10G SFP+ SFP+ 3m Direct Attach Copper Cable	JD097C
HP X240 10G SFP+ SFP+ 5m Direct Attach Copper Cable	JG081C
HP X240 10G SFP+ 7m Direct Attach Copper Cable	

Note 4	The following Transceivers install into this Module ² (Use #0D1 if switch is CTO)	
	HP X135 10G XFP LC ER Transceiver	JD121A
	HP X130 10G XFP SC LR Transceiver	JD108B
	HP X130 10G XFP LC SR Transceiver	JD117B
	HP X130 10G XFP LC ZR 1550nm Transceiver	JD107A
	HP X180 10G XFP LC 1538.98 DWDM Xcvr	JG226A
	HP X180 10G XFP LC 1539.77 DWDM Xcvr	JG227A
	HP X180 10G XFP LC 1540.56 DWDM Xcvr	JG228A
	HP X180 10G XFP LC 1542.14 DWDM Xcvr	JG229A
	HP X180 10G XFP LC 1542.94 DWDM Xcvr	JG230A
	HP X180 10G XFP LC 1558.98 DWDM Xcvr	JG231A
	HP X180 10G XFP LC 1559.79 DWDM Xcvr	JG232A
	HP X180 10G XFP LC 1560.61 DWDM Xcvr	JG233A

Note 5	The following Transceivers install into this Module ² (Use #0D1 if switch is CTO)	
	HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
	HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
	HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
	HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
	HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
	HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
	HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
	HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
	HP X120 1G SFP LC LH100 Transceiver	JD103A
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X120 1G SFP RJ45 T Transceiver	JD089B
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X120 1G SFP LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X110 100M SFP LC LH40 Transceiver	JD090A
	HP X110 100M SFP LC LH80 Transceiver	JD091A
	HP X110 100M SFP LC FX Transceiver	JD102B
	HP X110 100M SFP LC LX Transceiver	JD120B
	HP X135 10G XFP LC ER Transceiver	JD121A
	HP X130 10G XFP SC LR Transceiver	JD108B
	HP X130 10G XFP LC SR Transceiver	JD117B
	HP X130 10G XFP LC ZR 1550nm Transceiver	JD107A

Note 6	The following Transceivers install into this Module ² (Use #0D1 if switch is CTO)	
	HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
	HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
	HP X170 1G SFP LC LH70 1590 Transceiver	JD111A

Configuration

HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
HP X120 1G SFP LC LH100 Transceiver	JD103A
HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP RJ45 T Transceiver	JD089B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X120 1G SFP LC BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X110 100M SFP LC BX 10-U Transceiver	JD100A
HP X110 100M SFP LC BX 10-D Transceiver	JD101A

Note 7 This Module is not supported on the JD242x and JD243x at this time.

Note 8 The following DIMMs install into this Module²(Use #0D1 if switch is CTO)

HP 7500 PoE DIMM Module	JD192B
HP A7500 24-port PoE DIMM	JC671A

Note 10 The following 40G Transceivers install into this switch²(Use #0D1 or #B01 if switch is CTO)

HP X140 40G QSFP+ LC LR4 SM XCVR	JG661A
HP X140 40G QSFP+ MPO SR4 Transceiver	JG325A
HP X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
HP X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HP X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HP X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HP X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HP X140 40G QSFP+ MPO SR4 Transceiver	JG325A

Note 11 The following CFP Transceivers install into this switch²

HP X140 40G CFP LC LR4 10km SM Transceiver	JC857A
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Note 12 The following PoE DIMM installs into this Module²(Use #0D1 if switch is CTO)
The JC671A - HP A7500 24-port PoE DIMM (must be installed to enable PoE on the these modules)

Note 13

HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B

Note 14 The following PoE DIMM installs into this Module²(Use #0D1 if switch is CTO)
JD192B - HP 7500 PoE DIMM Module (must be installed to enable PoE on the these modules)

Configuration

Note 15	<p>Maximum of this Module per Chassis²</p> <p>JD238B min=0\max=9 per Chassis</p> <p>JG509A min=0\max=7 per Chassis</p> <p>JD239B, JD241B min=0\max=5 per Chassis</p> <p>JG508A min=0\max=3 per Chassis</p> <p>JD240B, JD243B min=0\max=2 per Chassis</p> <p>JD242B, JG507A min=0\max=1 per Chassis</p> <p>There are no restrictions on which slots these modules may go in.</p>
Remark	<p>JD253A - Additional User licenses available below in the 'Switch Enclosure Options' category.</p> <p>JG639A and JG645A - Additional AP licenses available below in the 'Switch Enclosure Options' category.</p>

Fabric Modules

System (std 0 // max 2) User Selection (min 1 // max 2) per enclosure	See Configuration Note ³ , 12
JG507A, JG508A and JG509A only System (std 1 // max 2) User Selection (min 0 // max 1) per enclosure	See Configuration Note ³ , 12
<p>HP 7500 384Gbps Fab Mod w/2 XFP Ports</p> <ul style="list-style-type: none"> min=0 \ max=2 XFP Transceivers 	<p>JD193B</p> <p>See Configuration Note¹, 4</p>
<p>HP 7500 384Gbps Fabric Module</p> <ul style="list-style-type: none"> No supported Transceivers 	<p>JD194B</p> <p>See Configuration Note¹</p>
<p>HP 7500 384Gbps Fab Mod w/12 SFP Ports</p> <ul style="list-style-type: none"> min=0 \ max=12 SFP Transceivers 	<p>JD224A</p> <p>See Configuration Note¹, 5</p>
<p>HP 7500 384Gbps Advanced Fabric Module</p> <ul style="list-style-type: none"> No supported Transceivers 	<p>JD195A</p> <p>See Configuration Note¹</p>
<p>HP 7500 384Gbps Lite Fabric Module</p> <ul style="list-style-type: none"> No supported Transceivers 	<p>JF219B</p> <p>See Configuration Note¹</p>
<p>HP 7500 768Gbps Fabric Module</p> <ul style="list-style-type: none"> No supported Transceivers 	<p>JD220A</p> <p>See Configuration Note¹</p>
<p>HP 7502 Fabric Module</p> <ul style="list-style-type: none"> No supported Transceivers 	<p>JD196A</p> <p>See Configuration Note¹⁰</p>
<p>HP 7503 Fabric Module with 24 GbE Ports</p> <ul style="list-style-type: none"> min=0 \ max=24 SFP Transceivers 	<p>JD222A</p> <p>See Configuration Note², 5</p>

Configuration

HP A7503-S 144 Gbps Fab/MPU w 24p Gig-T

- min=0 \ max=4 SFP Transceivers

JC666A

See Configuration
Note-2, 5,13

Configuration Rules-

Note 1	<p>These Modules install to the following switches-(Use #0D1 if switch is CTO)</p> <p>HP A7503 Switch Chassis JD240x</p> <p>HP A7506 Switch Chassis JD239x</p> <p>HP 7506 Swch w/96p GT 2p 10G 384Gbps MPU JG508A</p> <p>HP A7506 Vertical Switch Chassis JD241x</p> <p>HP A7510 Switch Chassis JD238x</p> <p>HP 7510 Swch w/96p GT 768Gbps MPU JG509A</p>
Note 2	<p>These Modules install to the following switches only-(Use #0D1 if switch is CTO)</p> <p>HP A7503 Switch Chassis with 1 Fabric Slot JD243x</p> <p>HP 7503 Swch w/48p GT 2p 10G 384Gbps MPU JG507A</p>
Note 3	<p>If JD243x or JG507A is selected then Max = 1.</p>
Note 4	<p>The following Transceivers install into this Module-(Use #0D1 if switch is CTO)</p> <p>HP X135 10G XFP LC ER Transceiver JD121A</p> <p>HP X130 10G XFP SC LR Transceiver JD108B</p> <p>HP X130 10G XFP LC SR Transceiver JD117B</p> <p>HP X130 10G XFP LC ZR 1550nm Transceiver JD107A</p> <p>HP X180 10G XFP LC 1538.98 DWDM Xcvr JG226A</p> <p>HP X180 10G XFP LC 1539.77 DWDM Xcvr JG227A</p> <p>HP X180 10G XFP LC 1540.56 DWDM Xcvr JG228A</p> <p>HP X180 10G XFP LC 1542.14 DWDM Xcvr JG229A</p> <p>HP X180 10G XFP LC 1542.94 DWDM Xcvr JG230A</p> <p>HP X180 10G XFP LC 1558.98 DWDM Xcv JG231A</p> <p>HP X180 10G XFP LC 1559.79 DWDM Xcvr JG232A</p> <p>HP X180 10G XFP LC 1560.61 DWDM Xcvr JG233A</p>
Note 5	<p>The following Transceivers install into this Module-(Use #0D1 if switch is CTO)</p> <p>HP X170 1G SFP LC LH70 1550 Transceiver JD109A</p> <p>HP X170 1G SFP LC LH70 1570 Transceiver JD110A</p> <p>HP X170 1G SFP LC LH70 1590 Transceiver JD111A</p> <p>HP X170 1G SFP LC LH70 1610 Transceiver JD112A</p> <p>HP X170 1G SFP LC LH70 1470 Transceiver JD113A</p> <p>HP X170 1G SFP LC LH70 1490 Transceiver JD114A</p> <p>HP X170 1G SFP LC LH70 1510 Transceiver JD115A</p> <p>HP X170 1G SFP LC LH70 1530 Transceiver JD116A</p> <p>HP X120 1G SFP LC LH100 Transceiver JD103A</p> <p>HP X125 1G SFP LC LH40 1310nm Transceiver JD061A</p> <p>HP X120 1G SFP LC LH40 1550nm Transceiver JD062A</p> <p>HP X125 1G SFP LC LH70 Transceiver JD063B</p> <p>HP X120 1G SFP RJ45 T Transceiver JD089B</p> <p>HP X120 1G SFP LC SX Transceiver JD118B</p> <p>HP X120 1G SFP LC LX Transceiver JD119B</p> <p>HP X120 1G SFP LC BX 10-U Transceiver JD098B</p>

Configuration

HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X110 100M SFP LC LH40 Transceiver	JD090A
HP X110 100M SFP LC LH80 Transceiver	JD091A
HP X110 100M SFP LC FX Transceiver	JD102B
HP X110 100M SFP LC LX Transceiver	JD120B
HP X110 100M SFP LC BX 10-U Transceiver	JD100A
HP X110 100M SFP LC BX 10-D Transceiver	JD101A

Note 10 These Modules install to the following switches only⁻(Use #0D1 if switch is CTO)
HP A7502 Switch Chassis JD242x

Note 11 These Modules install to the following switches only⁻(Use #0D1 if switch is CTO)
HP A7510 Switch Chassis JD238x
HP 7510 Swch w/96p GT 768Gbps MPU JG509A

Note 12 If 2 Fabric Modules are selected they must be the same Sku number.

Note 13 The following PoE DIMM installs into this Module⁻(Use #0D1 if switch is CTO)
The JC671A - HP A7500 24-port PoE DIMM (must be installed to enable PoE on the these modules)

Remarks⁻ For Switch A7503,A7506 and A7506-V, these modules can only be inserted into the Slot 0 and Slot 1. And for Switch A7510, this module can only be inserted into the Slot 5 and Slot 6. For Switch A7503-S, this module can only be inserted into the Slot 0.

A7500 PoE Module

System (std 0 // max 1) User Selection (min 0 // max 1) per Ethernet or Fabric Module

HP 7500 PoE DIMM Module JD192B
See Configuration Note⁻1, 3, 5, 6

HP A7500 24-port PoE DIMM JC671A
See Configuration Note⁻2, 4, 5, 6

Configuration Rules⁻

Note 1 The JD192B is optional when you have selected the JD199B, JD198B, JD210A, JC709A, JC710A or JD228B modules.

Note 2 If this DIMM is selected at least one JD219A - HP A7500 2800W AC Power Supply is required. (Except for JD242x, and JD243x, see rule 6)

Note 3 If 1 or more of the JD192B (PoE DIMM Module) is ordered than the customer must also order 2 of JD208A, JD218A, JD219A, or JD227A in order to support PoE. (Except for JD242x, and JD243x, see rule 6)

Note 4 The JC671A is optional when you have selected the JC666A, JC669A or JC668A modules.



Configuration

Note 5 This Module is not supported on JG507A at this time.

Note 6 This Module is supported on the JD242x, and JD243x only when an External DC Power Source is connected to the rear terminals. (See Installation Guide)

Transceivers

SFP+ Transceivers

HP X130 10G SFP+ LC SR Transceiver	JD092B
HP X130 10G SFP+ LC LRM Transceiver	JD093B
HP X130 10G SFP+ LC LR Transceiver	JD094B
HP X240 10G SFP+ SFP+ 0.65m Direct Attach Copper Cable	JD095C#B01
HP X240 10G SFP+ SFP+ 1.2m Direct Attach Copper Cable	JD096C#B01
HP X240 10G SFP+ SFP+ 3m Direct Attach Copper Cable	JD097C#B01
HP X240 10G SFP+ SFP+ 5m Direct Attach Copper Cable	JG081C#B01
HP X240 10G SFP+ 7m Direct Attach Copper Cable	JC784C#B01

SFP Transceivers

HP X170 1G SFP LC LH70 1550 Transceiver	JD109A
HP X170 1G SFP LC LH70 1570 Transceiver	JD110A
HP X170 1G SFP LC LH70 1590 Transceiver	JD111A
HP X170 1G SFP LC LH70 1610 Transceiver	JD112A
HP X170 1G SFP LC LH70 1470 Transceiver	JD113A
HP X170 1G SFP LC LH70 1490 Transceiver	JD114A
HP X170 1G SFP LC LH70 1510 Transceiver	JD115A
HP X170 1G SFP LC LH70 1530 Transceiver	JD116A
HP X120 1G SFP LC LH100 Transceiver	JD103A
HP X125 1G SFP LC LH40 1310nm XCVR	JD061A
HP X120 1G SFP LC LH40 1550nm XCVR	JD062A
HP X120 1G SFP RJ45 T Transceiver	JD089B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X110 100M SFP LC LH40 Transceiver	JD090A
HP X110 100M SFP LC LH80 Transceiver	JD091A
HP X115 100M SFP LC FX Transceiver	JD102B
HP X110 100M SFP LC LX Transceiver	JD120B
HP X110 100M SFP LC BX 10-U Transceiver	JD100A
HP X110 100M SFP LC BX 10-D Transceiver	JD101A

XFP Transceivers

HP X135 10G XFP LC ER Transceiver	JD121A
HP X130 10G XFP LC ZR 1550nm Transceiver	JD107A
HP X130 10G XFP LC SR Transceiver	JD117B
HP X130 10G XFP LC LR 1310nm Transceiver	JD108B



Configuration

HP X180 10G XFP LC 1538.98 DWDM Xcvr	JG226A
HP X180 10G XFP LC 1539.77 DWDM Xcvr	JG227A
HP X180 10G XFP LC 1540.56 DWDM Xcvr	JG228A
HP X180 10G XFP LC 1542.14 DWDM Xcvr	JG229A
HP X180 10G XFP LC 1542.94 DWDM Xcvr	JG230A
HP X180 10G XFP LC 1558.98 DWDM Xcv	JG231A
HP X180 10G XFP LC 1559.79 DWDM Xcvr	JG232A
HP X180 10G XFP LC 1560.61 DWDM Xcvr	JG233A

QSFP+ Transceivers

HP X140 40G QSFP+ LC LR4 SM XCVR	JG661A
HP X140 40G QSFP+ MPO SR4 Transceiver	JG325A
HP X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A#B01
HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A#B01
HP X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A#B01
HP X240 QSFP+ 4x10G SFP+ 1m Direct Attach Copper Cable	JG329A#B01
HP X240 QSFP+ 4x10G SFP+ 3m Direct Attach Copper Cable	JG330A#B01
HP X240 QSFP+ 4x10G SFP+ 5m Direct Attach Copper Cable	JG331A#B01

CFP Transceivers

HP X140 40G CFP LC LR4 10km SM Transceiver	JC857A
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Switch Enclosure Options

Software Licenses

HP 10500/7500 Wrd-WLAN Mod 128 AP E-LTU	JG649AAE
<ul style="list-style-type: none"> (min 0 // max 7) REMARK-This license is for use with the Redundant Controllers.	See Configuration Note¹
HP Unified Wired-WLAN 128 AP Redundant E-LTU	JG902AAE
<ul style="list-style-type: none"> (min 0 // max 7) REMARK-This license is for use with the Redundant Controllers.	See Configuration Note¹

Configuration Rules²

Note 1 Only supported on JG639A and JG645A.

Compact Flash cards

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

HP X600 1G Compact Flash Card	JC684A
	See Configuration Note¹

Configuration

HP X600 512M Compact Flash Card	JC685A See Configuration Note 1
HP X600 256M Compact Flash Card	JC686A See Configuration Note 1

Configuration Rules

Note 1	These CF Cards are supported on the following Modules only-	
	HP 7502 Fabric Module	JD196A
	HP 7500 384Gbps Fabric Module with 2 XFP Ports	JD193B
	HP 7500 384Gbps Fabric Module	JD194B
	HP 7500 768Gbps Fabric Module	JD220A
	HP 7500 384Gbps Advanced Fabric Module	JD195A
	HP 7500 384Gbps Lite Fabric Module	JF219B
	HP 7500 384Gbps Fab Mod w/12 SFP Ports	JD224A
	HP 7502 TAA-compliant Main Processing Unit	JC697A
	HP 7500 384 Gbps TAA-compliant Fabric/Main Processing unit with 2 10-GbE XFP Ports	JC699A
	HP 7500 384 Gbps TAA-compliant Fabric/Main Processing Unit	JC700A
	HP 7510 768 Gbps TAA-compliant Fabric/Main Processing Unit	JC701A
	HP A7503-S 144 Gbps Fab/MPU w 24p Gig-T	JC666A
	HP 9500 VPN Firewall Module	JD245A

Options for the SSL VPN Service Board Modules (JD253x)

HP 7500 SSL VPN 1000-user License	JD257A See Configuration Note 1
<ul style="list-style-type: none"> min=0\ max=10 per SSL 	
HP 7500 SSL VPN 1000-user License	JD257AAE See Configuration Note 1
<ul style="list-style-type: none"> min=0\ max=10 per SSL 	

Configuration Rules

Note 1	Any mixture of (JD257A) that equals 10,000 LTU's is the max per any JD253A module the maximum would be based on the module and not the entire switch.
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Options for the S1200N IPS A7500 Module (JC527A)

System (std 0 // max - no limit) User Selection (min 0 // max - no limit) per S1200N IPS A7500 Module

HP A7500 S1200N 1-y Rep DV Subsc Svc	JC592A
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Configuration

[See
Configuration
Note⁻¹](#)

HP A7500 S1200N 3-y Rep DV Subsc Svc

JC593A
[See
Configuration
Note⁻¹](#)

Configuration Rules⁻

Note 1 If any DV Subsc Svc is selected #0D1, it must be integrated to one of the following modules⁻
JC527A - HP S1200N IPS A7500 Module

Spare Fan Assembly

HP 7502 Spare Fan Assembly	JD213A
HP 7503 Spare Fan Assembly	JD212A
HP 7506 Spare Fan Assembly	JD214A
HP 7506-V Spare Fan Assembly	JD215A
HP 7510 Spare Fan Assembly	JD216A
HP 7503-S Spare Fan Assembly	JC672A

Remarks⁻

JD213A - This item is only used to replace the fan module of an A7502 . A host is delivered with the fan module.

JD212A - This item is only used to replace the fan module of an A7503. A host is delivered with the fan module.

JD214A - This item is only used to replace the fan module of an A7506. A host is delivered with the fan module.

JD215A - This item is only used to replace the fan module of an A7506-V. A host is delivered with the fan module.

JD216A - This item is only used to replace the fan module of an A7510. A host is delivered with the fan module.

JC672A - This item is only used to replace the fan module of an A7503-S. A host is delivered with the fan module.

Technical Specifications

HP 7510 Switch Chassis (JD238B)

Included accessories	1 HP 7510 Spare Fan Assembly (JD216A)	
Ports	2 switch fabric slots 10 I/O module slots Supports a maximum of 84 10-GbE ports or 480 autosensing 10/100/1000 ports or 480 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD216A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 27.87(h) in (43.6 x 42.0 x 70.8 cm) (16U height)
	Weight	211 lb (95.71 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	714 million pps
	Routing/Switching capacity	1152 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 53.5 dB, High-speed fan ³ 56.7 dB
Electrical characteristics	Description	
	Voltage	100-120 / 200-240 VAC
	DC Voltage	-48 V / -60 V
	Current	16 / 50 A
	Power output	1400 W
	Frequency	50 / 60 Hz
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001+A2 ⁵ 2005 EMC Directive 2004/108/EC	

Technical Specifications

	FCC (CFR 47, Part 15) Class A
Immunity	Generic ETSI EN 300 386 V1.3.3
	EN EN 61000-4-2-1995+A1-1998+A2-2001
	ESD EN 61000-4-2
	Radiated EN 61000-4-3
	EFT/Burst EN 61000-4-4
	Surge EN 61000-4-5
	Conducted EN 61000-4-6
	Power frequency magnetic field IEC 61000-4-8
	Voltage dips and interruptions EN 61000-4-11
	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-out-of-band management (serial RS-232C)-SNMP Manager-Telnet-terminal interface (serial RS-232C)-modem interface-IEEE 802.3 Ethernet MIB-Ethernet Interface MIB
Notes	For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A) For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A). IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.
Services	3-year, parts only, global next-day advance exchange (HP781E) 3-year, 4-hour onsite, 13x5 coverage for hardware (HP782E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HP785E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HP788E) 3-year, 24x7 SW phone support, software updates (HP791E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR511E) Installation with minimum configuration, system-based pricing (UX032E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HP783E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HP786E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP789E) 4-year, 24x7 SW phone support, software updates (HP792E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HP784E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HP787E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP790E) 5-year, 24x7 SW phone support, software updates (HP793E) 3 Yr 6 hr Call-to-Repair Onsite (HP795E) 3 Yr 6 hr Call-to-Repair Onsite (HP794E) 5 Yr 6 hr Call-to-Repair Onsite (HP796E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HR509E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR510E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR513E) 1-year, 24x7 software phone support, software updates (HR512E)
	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 7506-V Switch Chassis (JD241B)

Included accessories 1 HP 7506-V Spare Fan Assembly (JD215A)



Technical Specifications

Ports	2 switch fabric slots 6 I/O module slots Supports a maximum of 52 10-GbE ports or 288 autosensing 10/100/1000 ports or 288 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD215A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 36.61(h) in (43.6 x 42.0 x 93.0 cm) (21U height)
	Weight	222 lb (100.7 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	488 million pps
	Routing/Switching capacity	768 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 52.1 dB, High-speed fan ³ 56.2 dB
Electrical characteristics	Description	The H3C S7506E (HP 7506) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120 / 200-240 VAC
	DC Voltage	-48 V / -60 V
	Current	16 / 50 A
	Power output	1400 W
	Frequency	50 / 60 Hz
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001 +A2 ⁵ 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	
Immunity	Generic	ETSI EN 300 386 V1.3.3



Technical Specifications

EN	EN 61000-4-2-1995+A1-1998+A2-2001
ESD	EN 61000-4-2
Radiated	EN 61000-4-3
EFT/Burst	EN 61000-4-4
Surge	EN 61000-4-5
Conducted	EN 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	EN 61000-4-11
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 - out-of-band management (serial RS-232C) - SNMP Manager - Telnet - terminal interface (serial RS-232C) - modem interface - IEEE 802.3 Ethernet MIB - Ethernet Interface MIB

Notes

For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A). For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A).
IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.

Services

3-year, parts only, global next-day advance exchange (UW999E)
3-year, 4-hour onsite, 13x5 coverage for hardware (UX001E)
3-year, 4-hour onsite, 24x7 coverage for hardware (UX004E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UX007E)
3-year, 24x7 SW phone support, software updates (UX010E)
1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR514E)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR515E)
1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR516E)
Installation with minimum configuration, system-based pricing (UX032E)
4-year, 4-hour onsite, 13x5 coverage for hardware (UX002E)
4-year, 4-hour onsite, 24x7 coverage for hardware (UX005E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX008E)
4-year, 24x7 SW phone support, software updates (UX011E)
5-year, 4-hour onsite, 13x5 coverage for hardware (UX003E)
5-year, 4-hour onsite, 24x7 coverage for hardware (UX006E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX009E)
5-year, 24x7 SW phone support, software updates (UX012E)
3 Yr 6 hr Call-to-Repair Onsite (UX013E)
4 Yr 6 hr Call-to-Repair Onsite (UX014E)
5 Yr 6 hr Call-to-Repair Onsite (UX015E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR518E)
1-year, 24x7 software phone support, software updates (HR517E)

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 7506 Switch Chassis (JD239B)

Included accessories 1 HP 7506 Spare Fan Assembly (JD214A)



Technical Specifications

Ports	2 switch fabric slots 6 I/O module slots Supports a maximum of 52 1-GbE ports or 288 autosensing 10/100/1000 ports or 288 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD214A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 22.64(h) in (43.6 x 42.0 x 57.5 cm) (13U height)
	Weight	207 lb (93.9 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	488 million pps
	Routing/Switching capacity	768 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 53.6 dB, High-speed fan ³ 57.7 dB
Electrical characteristics	Achieved Miercom Certified Green Award	
	Description	The H3C S7506E (HP 7506) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120 / 200-240 VAC
	DC Voltage	-48 V / -60 V
	Current	16 / 50 A
	Power output	1400 W
	Frequency	50 / 60 Hz
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001 +A2 ⁵ 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	

Technical Specifications

Immunity	<p>Generic ETSI EN 300 386 V1.3.3</p> <p>EN EN 61000-4-2-1995+A1-1998+A2-2001</p> <p>ESD EN 61000-4-2</p> <p>Radiated EN 61000-4-3</p> <p>EFT/Burst EN 61000-4-4</p> <p>Surge EN 61000-4-5</p> <p>Conducted EN 61000-4-6</p> <p>Power frequency magnetic field IEC 61000-4-8</p> <p>Voltage dips and interruptions EN 61000-4-11</p> <p>Harmonics EN 61000-3-2, IEC 61000-3-2</p> <p>Flicker EN 61000-3-3, IEC 61000-3-3</p>
Management	<p>IMC - Intelligent Management Center- command-line interface- Web browser- out-of-band management (serial RS-232C)- SNMP Manager- Telnet- terminal interface (serial RS-232C)- modem interface- IEEE 802.3 Ethernet MIB- Ethernet Interface MIB</p>
Notes	<p>For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A)</p> <p>For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A).</p> <p>IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.</p>
Services	<p>3-year, parts only, global next-day advance exchange (UW999E)</p> <p>3-year, 4-hour onsite, 13x5 coverage for hardware (UX001E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware (UX004E)</p> <p>3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UX007E)</p> <p>3-year, 24x7 SW phone support, software updates (UX010E)</p> <p>1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR514E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR515E)</p> <p>1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR516E)</p> <p>Installation with minimum configuration, system-based pricing (UX032E)</p> <p>4-year, 4-hour onsite, 13x5 coverage for hardware (UX002E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware (UX005E)</p> <p>4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX008E)</p> <p>4-year, 24x7 SW phone support, software updates (UX011E)</p> <p>5-year, 4-hour onsite, 13x5 coverage for hardware (UX003E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware (UX006E)</p> <p>5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UX009E)</p> <p>5-year, 24x7 SW phone support, software updates (UX012E)</p> <p>3 Yr 6 hr Call-to-Repair Onsite (UX013E)</p> <p>4 Yr 6 hr Call-to-Repair Onsite (UX014E)</p> <p>5 Yr 6 hr Call-to-Repair Onsite (UX015E)</p> <p>1-year, 6 hour Call-To-Repair Onsite for hardware (HR518E)</p> <p>1-year, 24x7 software phone support, software updates (HR517E)</p> <p>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.</p>

HP 7503 Switch Chassis (JD240B)

Included accessories 1 HP 7503 Spare Fan Assembly (JD212A)



Technical Specifications

Ports	2 switch fabric slots 3 I/O module slots Supports a maximum of 28 10GbE ports or 144 autosensing 10/100/1000 ports or 144 SFP ports or 12 40 GbE ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD212A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 17.36(h) in (43.6 x 42.0 x 44.1 cm) (10U height)
	Weight	147 lb (66.68 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	274 million pps
	Routing/Switching capacity	480 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 51.6 dB, High-speed fan ³ 56.1 dB
Electrical characteristics	Description	The H3C S7506E (HP 7506) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120 / 200-240 VAC
	DC Voltage	-48 V / -60 V
	Current	16 / 50 A
	Power output	1400 W
	Frequency	50 / 60 Hz
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001 +A2 ⁵ 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	
Immunity	Generic	ETSI EN 300 386 V1.3.3

Technical Specifications

EN	EN 61000-4-2-1995+A1-1998+A2-2001
ESD	EN 61000-4-2
Radiated	EN 61000-4-3
EFT/Burst	EN 61000-4-4
Surge	EN 61000-4-5
Conducted	EN 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	EN 61000-4-11
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 - out-of-band management (serial RS-232C) - SNMP Manager - Telnet - terminal interface (serial RS-232C) - modem interface - IEEE 802.3 Ethernet MIB - Ethernet Interface MIB

Notes

For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A). For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A).
IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.

Services

3-year, parts only, global next-day advance exchange (HP799E)
3-year, 4-hour onsite, 13x5 coverage for hardware (HP800E)
3-year, 4-hour onsite, 24x7 coverage for hardware (HP803E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HP806E)
3-year, 24x7 SW phone support, software updates (HP809E)
Installation with minimum configuration, system-based pricing (UX032E)
4-year, 4-hour onsite, 13x5 coverage for hardware (HP801E)
4-year, 4-hour onsite, 24x7 coverage for hardware (HP804E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP807E)
4-year, 24x7 SW phone support, software updates (HP810E)
5-year, 4-hour onsite, 13x5 coverage for hardware (HP802E)
5-year, 4-hour onsite, 24x7 coverage for hardware (HP805E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP808E)
5-year, 24x7 SW phone support, software updates (HP811E)
3 Yr 6 hr Call-to-Repair Onsite (HP812E)
4 Yr 6 hr Call-to-Repair Onsite (HP813E)
5 Yr 6 hr Call-to-Repair Onsite (HP814E)
1-year, 4-hour onsite, 13x5 coverage for hardware (HR519E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR520E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR523E)
1-year, 24x7 software phone support, software updates (HR522E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR521E)

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 7503-S Switch Chassis with 1 Fabric Slot (JD243B)

Included accessories 1 HP 7503-S Spare Fan Assembly (JC672A)

Technical Specifications

Ports	1 switch fabric slot 2 I/O module slots Supports a maximum of 16 10GbE ports or 120 autosensing 10/100/1000 ports or 120 SFP ports or 8 40-GbE ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ² 1 x JC672A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 6.89(h) in (43.6 x 42.0 x 17.5 cm) (4U height)
	Weight	59 lb (26.76 kg), Fully loaded chassis, one fabric, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 400 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ³ horizontal surface mounting only	
Performance	Throughput	107 million pps
	Routing/Switching capacity	144 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	High-speed fan ² 56.7 dB
Electrical characteristics	Description	The H3C S7506E (HP 7506) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120 / 200-240 VAC
	DC Voltage	-48 V / -60 V
	Current	5 / 10 A
	Power output	300 W
	Frequency	50 / 60 Hz
	Notes	Based on a common power supply of 300 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ² 2006 EN 61000-3-3 ¹ 1995 +A1 ² 2001+A2 ² 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	
Immunity	Generic	ETSI EN 300 386 V1.3.3

Technical Specifications

EN	EN 61000-4-2-1995+A1-1998+A2-2001
ESD	EN 61000-4-2
Radiated	EN 61000-4-3
EFT/Burst	EN 61000-4-4
Surge	EN 61000-4-5
Conducted	EN 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	EN 61000-4-11
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- out-of-band management (serial RS-232C)- SNMP Manager- Telnet- terminal interface (serial RS-232C)- modem interface- IEEE 802.3 Ethernet MIB- Ethernet Interface MIB
Notes	For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A) For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A). IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.
Services	3-year, parts only, global next-day advance exchange (HP799E) 3-year, 4-hour onsite, 13x5 coverage for hardware (HP800E) 3-year, 4-hour onsite, 24x7 coverage for hardware (HP803E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HP806E) 3-year, 24x7 SW phone support, software updates (HP809E) Installation with minimum configuration, system-based pricing (UX032E) 4-year, 4-hour onsite, 13x5 coverage for hardware (HP801E) 4-year, 4-hour onsite, 24x7 coverage for hardware (HP804E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP807E) 4-year, 24x7 SW phone support, software updates (HP810E) 5-year, 4-hour onsite, 13x5 coverage for hardware (HP802E) 5-year, 4-hour onsite, 24x7 coverage for hardware (HP805E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP808E) 5-year, 24x7 SW phone support, software updates (HP811E) 3 Yr 6 hr Call-to-Repair Onsite (HP812E) 4 Yr 6 hr Call-to-Repair Onsite (HP813E) 5 Yr 6 hr Call-to-Repair Onsite (HP814E) 1-year, 4-hour onsite, 13x5 coverage for hardware (HR519E) 1-year, 4-hour onsite, 24x7 coverage for hardware (HR520E) 1-year, 6 hour Call-To-Repair Onsite for hardware (HR523E) 1-year, 24x7 software phone support, software updates (HR522E) 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR521E) 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 7502 Switch Chassis (JD242B)

Included accessories 1 HP 7502 Spare Fan Assembly (JD213A)



Technical Specifications

Ports	2 MPU (for management modules) slots 2 I/O module slots Supports a maximum of 16 10GbE ports or 96 autosensing 10/100/1000 ports or 96 SFP ports or 8 40-Gt ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD213A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 6.89(h) in (43.6 x 42.0 x 17.5 cm) (4U height)
	Weight	59 lb (26.76 kg), Fully loaded chassis, two management modules, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	143 million pps
	Routing/Switching capacity	192 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 49.8 dB, High-speed fan ³ 56.7 dB
Electrical characteristics	Description	The H3C S7506E (HP 7506) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120/200-240 VAC
	DC Voltage	-48 V/-60 V
	Current	5/10 A
	Power output	300 W
	Frequency	50/60 Hz
	Notes	Based on a common power supply 300 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001 +A2 ⁵ 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	
Immunity	Generic	ETSI EN 300 386 V1.3.3



Technical Specifications

EN	EN 61000-4-2-1995+A1-1998+A2-2001
ESD	EN 61000-4-2
Radiated	EN 61000-4-3
EFT/Burst	EN 61000-4-4
Surge	EN 61000-4-5
Conducted	EN 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	EN 61000-4-11
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 - out-of-band management (serial RS-232C) - SNMP Manager - Telnet - terminal interface (serial RS-232C) - modem interface - IEEE 802.3 Ethernet MIB - Ethernet Interface MIB

Notes

For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A).
For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A).
IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.

Services

3-year, parts only, global next-day advance exchange (HP799E)
3-year, 4-hour onsite, 13x5 coverage for hardware (HP800E)
3-year, 4-hour onsite, 24x7 coverage for hardware (HP803E)
3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HP806E)
3-year, 24x7 SW phone support, software updates (HP809E)
Installation with minimum configuration, system-based pricing (UX032E)
4-year, 4-hour onsite, 13x5 coverage for hardware (HP801E)
4-year, 4-hour onsite, 24x7 coverage for hardware (HP804E)
4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP807E)
4-year, 24x7 SW phone support, software updates (HP810E)
5-year, 4-hour onsite, 13x5 coverage for hardware (HP802E)
5-year, 4-hour onsite, 24x7 coverage for hardware (HP805E)
5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (HP808E)
5-year, 24x7 SW phone support, software updates (HP811E)
3 Yr 6 hr Call-to-Repair Onsite (HP812E)
4 Yr 6 hr Call-to-Repair Onsite (HP813E)
5 Yr 6 hr Call-to-Repair Onsite (HP814E)
1-year, 4-hour onsite, 13x5 coverage for hardware (HR519E)
1-year, 4-hour onsite, 24x7 coverage for hardware (HR520E)
1-year, 6 hour Call-To-Repair Onsite for hardware (HR523E)
1-year, 24x7 software phone support, software updates (HR522E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR521E)

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 7503 Switch with 48-port Gig-T PoE+ Module and 384Gbps MPU with 2 XFP ports (JG507A)

Included accessories

1 HP 7503 Spare Fan Assembly (JD212A)
1 HP 7500 384Gbps Fabric Module with 2 XFP Ports (JD193B)
1 HP 7500 48-port Gig-T PoE+ Extended Module (JD229B)

Technical Specifications

Ports	2 switch fabric slots 3 I/O module slots Supports a maximum of 28 10GbE ports or 144 autosensing 10/100/1000 ports or 144 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ¹ 1 x JD212A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 17.36(h) in (43.6 x 42.0 x 44.1 cm) (10U height)
	Weight	147 lb (66.68 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) ² horizontal surface mounting only	
Performance	Throughput	274 million pps
	Routing/Switching capacity	480 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ³ 51.6 dB, High-speed fan ³ 56.1 dB
Electrical characteristics	Frequency	50/60 Hz
	Description	
	Voltage	100-120/200-240 VAC
	DC Voltage	-48 to -60 VDC
	Current	16/50 A
	Power output	1400 W
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 ⁴ IEC 60950-1 ⁴ CAN/CSA-C22.2 No. 60950-1 ⁴ EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2 ⁵ 2006 EN 61000-3-3 ⁵ 1995 +A1 ⁵ 2001+A2 ⁵ 2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A	
Immunity	Generic	ETSI EN 300 386 V1.3.3
	EN	EN 61000-4-2 ⁶ 1995+A1 ⁶ 1998+A2 ⁶ 2001

Technical Specifications

ESD	EN 61000-4-2
Radiated	EN 61000-4-3
EFT/Burst	EN 61000-4-4
Surge	EN 61000-4-5
Conducted	EN 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	EN 61000-4-11
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; out-of-band management (serial RS-232C); SNMP Manager; Telnet; terminal interface (serial RS-232C); modem interface; IEEE 802.3 Ethernet MIB; Ethernet Interface MIB
Notes	For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A). For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A). IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.
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 7506 Switch with 2 48-port Gig-T PoE+ Modules and 384Gbps MPU with 2 XFP ports (JG508A)

Included accessories	1 HP 7506 Spare Fan Assembly (JD214A) 2 HP 7500 48-port Gig-T PoE+ Extended Module (JD229B) 1 HP 7500 384Gbps Fabric Module with 2 XFP Ports (JD193B)	
Ports	2 switch fabric slots 6 I/O module slots Supports a maximum of 52 10GbE ports or 288 autosensing 10/100/1000 ports or 288 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes - 1 x JD214A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 22.64(h) in (43.6 x 42.0 x 57.5 cm) (13U height)
	Weight	207 lb (93.9 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included); horizontal surface mounting only	
Performance	Throughput	488 million pps
	Routing/Switching capacity	768 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)



Technical Specifications

	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	High-speed fan=56.7 dB
Electrical characteristics	Frequency	50/60 Hz
		Achieved Miercom Certified Green Award
	Description	The H3C S7506E (HP 7606) is Certified Green in the 2009 Miercom Green Switches Industry Assessment.
	Voltage	100-120/200-240 VAC
	DC Voltage	-48 to -60 VDC
	Current	16/50 A
	Power output	1400 W
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety		UL 60950-1=IEC 60950-1=CAN/CSA-C22.2 No. 60950-1=EN 60950-1/A11
Emissions		VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A EN 61000-3-2=2006 EN 61000-3-3=1995 +A1=2001 +A2=2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A
Immunity	Generic	ETSI EN 300 386 V1.3.3
	EN	EN 61000-4-2=1995+A1=1998+A2=2001
	ESD	EN 61000-4-2
	Radiated	EN 61000-4-3
	EFT/Burst	EN 61000-4-4
	Surge	EN 61000-4-5
	Conducted	EN 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	EN 61000-4-11
	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=out-of-band management (serial RS-232C)=SNMP Manager=Telnet=terminal interface (serial RS-232C)=modem interface=IEEE 802.3 Ethernet MIB=Ethernet Interface MIB
Notes		For non-TAA environments, IPS/IDS functionality is provided by the HP S1200E IPS 7500 Module (JC527A) For non-TAA environments, IKE/IPSec functionality is provided by the HP 7500 VPN Firewall Module (JD249A). IRF functionality is not supported on HP 7502 and 7503-S Switch Chassis.
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.

Technical Specifications

HP 7510 Switch with 2 48-port Gig-T PoE+ Modules and 768Gbps MPU (JG509A)

Included accessories	2 HP 7500 48-port Gig-T PoE+ Extended Module (JD229B) 1 HP 7500 768Gbps Fabric Module (JD220A) 1 HP 7510 Spare Fan Assembly (JD216A)	
Ports	2 switch fabric slots 10 I/O module slots Supports a maximum of 84 10GbE ports or 480 autosensing 10/100/1000 ports or 480 SFP ports, or a combination	
Power supplies	2 power-supply slots 1 minimum power-supply required (ordered separately)	
Fan tray	includes ⁻ 1 x JD216A 1 fan tray slot	
Physical characteristics	Dimensions	17.17(w) x 16.54(d) x 27.87(h) in (43.6 x 42.0 x 70.8 cm) (16U height)
	Weight	211 lb (95.71 kg), Fully loaded chassis, two fabrics, two power supplies, and a full complement of typical I/O modules
Memory and processor	Fabric	MIPS64 @ 600 MHz, 64 MB flash, 512 MB RAM
	I/O Module	MIPS64 @ 400 MHz, 512 MB RAM
Mounting	Mounts in an EIA-standard 19 in. rack or other equipment cabinet (hardware included) [†] horizontal surface mounting only	
Performance	Throughput	714 million pps
	Routing/Switching capacity	1152 Gbps
	Routing table size	256000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	512000 entries
Reliability	Availability	99.999%
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 95%, non-condensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, non-condensing
	Acoustic	Low-speed fan ⁻ 53.5 dB, High-speed fan ⁻ 56.7 d
Electrical characteristics	Frequency	50/60 Hz
	Description	
	Voltage	100-120/200-240 VAC
	DC Voltage	-48 to -60 VDC
	Current	16/50 A
	Power output	1400 W
	Notes	Based on a common power supply of 1400 W (AC/DC)
Safety	UL 60950-1 [†] IEC 60950-1 [†] CAN/CSA-C22.2 No. 60950-1 [†] EN 60950-1/A11	
Emissions	VCCI Class A EN 55022 Class A ICES-003 Class A ANSI C63.4 2003 AS/NZS CISPR 22 Class A	

Technical Specifications

	EN 61000-3-2-2006 EN 61000-3-3-1995 +A1-2001+A2-2005 EMC Directive 2004/108/EC FCC (CFR 47, Part 15) Class A																						
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Management	IMC - Intelligent Management Center- command-line interface-Web browser- out-of-band management (serial RS-232C)- SNMP Manager-Telnet-terminal interface (serial RS-232C)- modem interface-IEEE 802.3 Ethernet MIB-Ethernet Interface MIB																						
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Standards and protocols (applies to all products in series)	<table border="0"> <tr> <td>BGP</td> <td>RFC 1771 BGPv4 RFC 1772 Application of the BGP RFC 1965 BGP4 confederations RFC 1997 BGP Communities Attribute RFC 1998 PPP Gandalf FZA Compression Protocol RFC 2385 BGP Session Protection via TCP MD5 RFC 2439 BGP Route Flap Damping RFC 2796 BGP Route Reflection RFC 2858 BGP-4 Multi-Protocol Extensions RFC 2918 Route Refresh Capability RFC 3065 Autonomous System Confederations for BGP RFC 3392 Capabilities Advertisement with BGP-4 RFC 4271 A Border Gateway Protocol 4 (BGP-4) RFC 4272 BGP Security Vulnerabilities Analysis RFC 4273 Definitions of Managed Objects for BGP-4 RFC 4274 BGP-4 Protocol Analysis RFC 4275 BGP-4 MIB Implementation Survey RFC 4276 BGP-4 Implementation Report RFC 4277 Experience with the BGP-4 Protocol RFC 4360 BGP Extended Communities Attribute RFC 4456 BGP Route Reflection-An Alternative to Full Mesh Internal BGP (IBGP) RFC 5291 Outbound Route Filtering Capability for</td> <td>MIBs</td> <td>RFC 1156 (TCP/IP MIB) RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1215 A Convention for Defining Traps for use with the SNMP RFC 1229 Interface MIB Extensions RFC 1493 Bridge MIB RFC 1573 SNMP MIB II RFC 1643 Ethernet MIB RFC 1657 BGP-4 MIB RFC 1724 RIPv2 MIB RFC 1757 Remote Network Monitoring MIB RFC 1850 OSPFv2 MIB RFC 1907 SNMPv2 MIB RFC 2011 SNMPv2 MIB for IP RFC 2012 SNMPv2 MIB for TCP RFC 2013 SNMPv2 MIB for UDP RFC 2096 IP Forwarding Table MIB RFC 2233 Interfaces MIB RFC 2452 IPV6-TCP-MIB RFC 2454 IPV6-UDP-MIB RFC 2465 IPV6 MIB RFC 2466 ICMPv6 MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB</td> </tr> </table>	BGP	RFC 1771 BGPv4 RFC 1772 Application of the BGP RFC 1965 BGP4 confederations RFC 1997 BGP Communities Attribute RFC 1998 PPP Gandalf FZA Compression Protocol RFC 2385 BGP Session Protection via TCP MD5 RFC 2439 BGP Route Flap Damping RFC 2796 BGP Route Reflection RFC 2858 BGP-4 Multi-Protocol Extensions RFC 2918 Route Refresh Capability RFC 3065 Autonomous System Confederations for BGP RFC 3392 Capabilities Advertisement with BGP-4 RFC 4271 A Border Gateway Protocol 4 (BGP-4) RFC 4272 BGP Security Vulnerabilities Analysis RFC 4273 Definitions of Managed Objects for BGP-4 RFC 4274 BGP-4 Protocol Analysis RFC 4275 BGP-4 MIB Implementation Survey RFC 4276 BGP-4 Implementation Report RFC 4277 Experience with the BGP-4 Protocol RFC 4360 BGP Extended Communities Attribute RFC 4456 BGP Route Reflection-An Alternative to Full Mesh Internal BGP (IBGP) RFC 5291 Outbound Route Filtering Capability for	MIBs	RFC 1156 (TCP/IP MIB) RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1215 A Convention for Defining Traps for use with the SNMP RFC 1229 Interface MIB Extensions RFC 1493 Bridge MIB RFC 1573 SNMP MIB II RFC 1643 Ethernet MIB RFC 1657 BGP-4 MIB RFC 1724 RIPv2 MIB RFC 1757 Remote Network Monitoring MIB RFC 1850 OSPFv2 MIB RFC 1907 SNMPv2 MIB RFC 2011 SNMPv2 MIB for IP RFC 2012 SNMPv2 MIB for TCP RFC 2013 SNMPv2 MIB for UDP RFC 2096 IP Forwarding Table MIB RFC 2233 Interfaces MIB RFC 2452 IPV6-TCP-MIB RFC 2454 IPV6-UDP-MIB RFC 2465 IPV6 MIB RFC 2466 ICMPv6 MIB RFC 2571 SNMP Framework MIB RFC 2572 SNMP-MPD MIB																		
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Technical Specifications

BGP-4
RFC 5292 Address-Prefix-Based Outbound Route Filter for BGP-4

Denial of service protection

RFC 2267 Network Ingress Filtering
Automatic filtering of well-known denial-of-service packets
CPU DoS Protection
Rate Limiting by ACLs

Device management

RFC 1157 SNMPv1/v2c
RFC 1305 NTPv3
RFC 1902 (SNMPv2)
RFC 2271 FrameWork
RFC 2579 (SMIv2 Text Conventions)
RFC 2580 (SMIv2 Conformance)
RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
HTTP, SSHv1, and Telnet
Multiple Configuration Files
Multiple Software Images
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+
Web UI

General protocols

IEEE 802.1ad Q-in-Q
IEEE 802.1ag Service Layer OAM
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1s Multiple Spanning Trees
IEEE 802.1w Rapid Reconfiguration of Spanning Tree
IEEE 802.1X PAE
IEEE 802.3ab 1000BASE-T
IEEE 802.3ac (VLAN Tagging Extension)
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3ae 10-Gigabit Ethernet
IEEE 802.3af Power over Ethernet
IEEE 802.3ah Ethernet in First Mile over Point to Point Fiber - EFMF
IEEE 802.3at
IEEE 802.3ba 40 and 100 Gigabit Ethernet Architecture
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow Control
IEEE 802.3z 1000BASE-X
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 894 IP over Ethernet
RFC 903 RARP

RFC 2573 SNMP-Notification MIB
RFC 2573 SNMP-Target MIB
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2580 Conformance Statements for SMIv2
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 2787 VRRP MIB
RFC 2819 RMON MIB
RFC 2925 Ping MIB
RFC 2933 IGMP MIB
RFC 2934 Protocol Independent Multicast MIB for IPv4
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks
RFC 3418 MIB for SNMPv3
RFC 3595 Textual Conventions for IPv6 Flow Label
RFC 3621 Power Ethernet MIB
RFC 3813 MPLS LSR MIB
RFC 3814 MPLS FTN MIB
RFC 3815 MPLS LDP MIB
RFC 3826 AES for SNMP's USM MIB
RFC 4133 Entity MIB (Version 3)
RFC 4444 Management Information Base for Intermediate System to Intermediate System (IS-IS)

MPLS

RFC 2205 Resource ReSerVation Protocol
RFC 2209 Resource ReSerVation Protocol (RSVP)
RFC 2702 Requirements for Traffic Engineering Over MPLS
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2961 RSVP Refresh Overhead Reduction Extensions
RFC 3031 Multiprotocol Label Switching Architecture
RFC 3032 MPLS Label Stack Encoding
RFC 3107 Carrying Label Information in BGP-4
RFC 3209 RSVP-TE² Extensions to RSVP for LSP Tunnels
RFC 3212 Constraint-Based LSP Setup using LDP
RFC 3479 Fault Tolerance for the Label Distribution Protocol (LDP)
RFC 3487 Graceful Restart Mechanism for LDP
RFC 3564 Requirements for Support of Differentiated Service-aware MPLS Traffic Engineering
RFC 4364 BGP/MPLS IP Virtual Private Networks (VPNs)
RFC 4379 Detecting Multi-Protocol Label Switched (MPLS) Data Plane Failures
RFC 4447 Pseudowire Setup and Maintenance Using LDP

Technical Specifications

RFC 906 TFTP Bootstrap	RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks
RFC 925 Multi-LAN Address Resolution	RFC 4664 Framework for Layer 2 Virtual Private Networks
RFC 950 Internet Standard Subnetting Procedure	RFC 4665 Service Requirements for Layer 2 Provider Provisioned Virtual Private Networks
RFC 951 BOOTP	RFC 4761 Virtual Private LAN Service (VPLS) Using BGP for Auto-Discovery and Signaling
RFC 959 File Transfer Protocol (FTP)	RFC 4762 Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling
RFC 1027 Proxy ARP	RFC 5036 LDP Specification
RFC 1035 Domain Implementation and Specification	
RFC 1042 IP Datagrams	
RFC 1058 RIPv1	
RFC 1142 OSI IS-IS Intra-domain Routing Protocol	
RFC 1195 OSI ISIS for IP and Dual Environments	
RFC 1213 Management Information Base for Network Management of TCP/IP-based internets	
RFC 1256 ICMP Router Discovery Protocol (IRDP)	
RFC 1293 Inverse Address Resolution Protocol	
RFC 1305 NTPv3	
RFC 1350 TFTP Protocol (revision 2)	
RFC 1393 Traceroute Using an IP Option	
RFC 1519 CIDR	
RFC 1531 Dynamic Host Configuration Protocol	
RFC 1533 DHCP Options and BOOTP Vendor Extensions	
RFC 1591 DNS (client only)	
RFC 1624 Incremental Internet Checksum	
RFC 1701 Generic Routing Encapsulation	
RFC 1721 RIP-2 Analysis	
RFC 1723 RIP v2	
RFC 1812 IPv4 Routing	
RFC 2030 Simple Network Time Protocol (SNTP) v4	
RFC 2082 RIP-2 MD5 Authentication	
RFC 2091 Trigger RIP	
RFC 2131 DHCP	
RFC 2138 Remote Authentication Dial In User Service (RADIUS)	
RFC 2236 IGMP Snooping	
RFC 2338 VRRP	
RFC 2453 RIPv2	
RFC 2644 Directed Broadcast Control	
RFC 2763 Dynamic Name-to-System ID mapping support	
RFC 2784 Generic Routing Encapsulation (GRE)	
RFC 2865 Remote Authentication Dial In User Service (RADIUS)	
RFC 2966 Domain-wide Prefix Distribution with Two Level IS-IS	
RFC 2973 IS-IS Mesh Groups	
RFC 3022 Traditional IP Network Address Translator (Traditional NAT)	
RFC 3277 IS-IS Transient Blackhole Avoidance	
RFC 3567 Intermediate System to Intermediate System (IS-IS) Cryptographic Authentication	
RFC 3719 Recommendations for Interoperable Networks using Intermediate System to Intermediate System (IS-IS)	
RFC 3784 ISIS TE support	
RFC 3786 Extending the Number of IS-IS LSP Fragments Beyond the 256 Limit	
RFC 3787 Recommendations for Interoperable IP	
	Network management
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	RFC 1155 Structure of Management Information
	RFC 1157 SNMPv1
	RFC 1448 Protocol Operations for version 2 of the Simple Network Management Protocol (SNMPv2)
	RFC 2211 Controlled-Load Network
	RFC 2819 Four groups of RMON-1 (statistics), 2 (history), 3 (alarm) and 9 (events)
	RFC 3176 sFlow
	RFC 3411 SNMP Management Frameworks
	RFC 3412 SNMPv3 Message Processing
	RFC 3414 SNMPv3 User-based Security Model (USM)
	RFC 3415 SNMPv3 View-based Access Control Model VACM)
	ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
	OSPF
	RFC 1245 OSPF protocol analysis
	RFC 1246 Experience with OSPF
	RFC 1765 OSPF Database Overflow
	RFC 1850 OSPFv2 Management Information Base (MIB), traps
	RFC 2154 OSPF w/ Digital Signatures (Password, MD-5)
	RFC 2328 OSPFv2
	RFC 2370 OSPF Opaque LSA Option
	RFC 3101 OSPF NSSA
	RFC 3137 OSPF Stub Router Advertisement
	RFC 3623 Graceful OSPF Restart
	RFC 3630 Traffic Engineering Extensions to OSPFv2
	RFC 4061 Benchmarking Basic OSPF Single Router Control Plane Convergence
	RFC 4062 OSPF Benchmarking Terminology and Concepts
	RFC 4063 Considerations When Using Basic OSPF Convergence Benchmarks
	RFC 4222 Prioritized Treatment of Specific OSPF Version 2 Packets and Congestion Avoidance
	RFC 4577 OSPF as the Provider/Customer Edge Protocol for BGP/MPLS IP Virtual Private Networks (VPNs)
	RFC 4811 OSPF Out-of-Band LSDB Resynchronization

Technical Specifications

Networks using Intermediate System to Intermediate System (IS-IS)
RFC 3847 Restart signaling for IS-IS
RFC 4251 The Secure Shell (SSH) Protocol Architecture
RFC 4486 Subcodes for BGP Cease Notification Message
RFC 4884 Extended ICMP to Support Multi-Part Messages
RFC 4941 Privacy Extensions for Stateless Address Autoconfiguration in IPv6
RFC 5130 A Policy Control Mechanism in IS-IS Using Administrative Tags

IP multicast

RFC 2236 IGMPv2
RFC 2283 Multiprotocol Extensions for BGP-4
RFC 2362 PIM Sparse Mode
RFC 3376 IGMPv3
RFC 3446 Anycast Rendezvous Point (RP) mechanism using Protocol Independent Multicast (PIM) and Multicast Source Discovery Protocol (MSDP)
RFC 3618 Multicast Source Discovery Protocol (MSDP)
RFC 3973 PIM Dense Mode
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
RFC 4601 Draft 10 PIM Sparse Mode
RFC 4604 Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source-Specific Multicast
RFC 4605 IGMP/MLD Proxying
RFC 4607 Source-Specific Multicast for IP
RFC 4610 Anycast-RP Using Protocol Independent Multicast (PIM)
RFC 5059 Bootstrap Router (BSR) Mechanism for Protocol Independent Multicast (PIM)

IPv6

RFC 1886 DNS Extension for IPv6
RFC 1887 IPv6 Unicast Address Allocation Architecture
RFC 1981 IPv6 Path MTU Discovery
RFC 2080 RIPng for IPv6
RFC 2081 RIPng Protocol Applicability Statement
RFC 2292 Advanced Sockets API for IPv6
RFC 2373 IPv6 Addressing Architecture
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6 Specification
RFC 2461 IPv6 Neighbor Discovery
RFC 2462 IPv6 Stateless Address Auto-configuration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 over Ethernet Networks
RFC 2473 Generic Packet Tunneling in IPv6

RFC 4812 OSPF Restart Signaling
RFC 4813 OSPF Link-Local Signaling
RFC 4940 IANA Considerations for OSPF

QoS/CoS

IEEE 802.1P (CoS)
RFC 1349 Type of Service in the Internet Protocol Suite
RFC 2211 Specification of the Controlled-Load Network Element Service
RFC 2212 Guaranteed Quality of Service
RFC 2474 DSCP DiffServ
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)

Security

IEEE 802.1X Port Based Network Access Control
RFC 1321 The MD5 Message-Digest Algorithm
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1492 TACACS+
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2082 RIP-2 MD5 Authentication
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2408 Internet Security Association and Key Management Protocol (ISAKMP)
RFC 2409 The Internet Key Exchange (IKE)
RFC 2716 PPP EAP TLS Authentication Protocol
RFC 2865 RADIUS Authentication
RFC 2866 RADIUS Accounting
RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 2869 RADIUS Extensions
Access Control Lists (ACLs)
Guest VLAN for 802.1x
MAC Authentication
Port Security
SSHv1/SSHv2 Secure Shell

VPN

RFC 2403 - HMAC-MD5-96
RFC 2404 - HMAC-SHA1-96
RFC 2405 - DES-CBC Cipher algorithm
RFC 2407 - Domain of interpretation
RFC 2547 BGP/MPLS VPNs
RFC 2917 A Core MPLS IP VPN Architecture
RFC 3947 - Negotiation of NAT-Traversal in the IKE
RFC 4302 - IP Authentication Header (AH)
RFC 4303 - IP Encapsulating Security Payload (ESP)

IPsec

RFC 1828 IP Authentication using Keyed MD5
RFC 1829 The ESP DES-CBC Transform

Technical Specifications

RFC 2526 Reserved IPv6 Subnet Anycast Addresses
RFC 2529 Transmission of IPv6 Packets over IPv4
RFC 2545 Use of MP-BGP-4 for IPv6
RFC 2553 Basic Socket Interface Extensions for IPv6
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2740 OSPFv3 for IPv6
RFC 2767 Dual stacks IPv4 & IPv6
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3307 IPv6 Multicast Address Allocation
RFC 3315 DHCPv6 (client and relay)
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3736 Stateless Dynamic Host Configuration Protocol (DHCP) Service for IPv6
RFC 3810 MLDv2 for IPv6
RFC 4214 Intra-Site Automatic Tunnel Addressing Protocol (ISATAP)
RFC 4861 IPv6 Neighbor Discovery
RFC 4862 IPv6 Stateless Address Auto-configuration
Replay Prevention
RFC 2401 IP Security Architecture
RFC 2402 IP Authentication Header
RFC 2406 IP Encapsulating Security Payload
RFC 2410 - The NULL Encryption Algorithm and its use with IPsec
RFC 2411 IP Security Document Roadmap

Accessory Product Details

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

HP 7500 48-port 100BASE-FX Module (JD197B)	Ports	48 SFP 100BASE-FX ports (IEEE 802.3u Type 100BASE-FX)±Duplex±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.72 lb. (3.05 kg)
	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 7500 48-port 10/100BASE-T Module (JD198B)	Ports	48 RJ-45 autosensing 10/100 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3af PoE)±Duplex±half or full	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.37 lb. (2.89 kg)
	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 7500 48-port Gig-T PoE-ready Module (JD199B)	Ports	48 RJ-45 autosensing 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.81 lb. (3.09 kg)
	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 7500 2-port 10GbE XFP Module (JD201A)	Ports	2 XFP 10-GbE ports±Duplex±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.5 lb. (2.95 kg)
	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 7500 24-port GbE SFP Module (JD203B)	Ports	24 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.13 lb. (2.78 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 7500 24-port Gig-T Module (JD204B)	Ports	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6 lb. (2.72 kg)
	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 7500 24-port GbE SFP / 2-port 10GbE XFP Module (JD205A)	Ports	24 SFP 100/1000 Mbps ports 2 XFP 10-GbE ports±Duplex±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.5 lb. (2.95 kg)
	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 7500 12-port GbE SFP Module (JD207A)	Ports	12 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 1.18(w) x 1.57(h) in. (35.5 x 3 x 4 cm)
		Weight	5.86 lb. (2.66 kg)
	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 7500 24-port Gig-T / 2-port 10GbE XFP Module (JD206A)	Ports	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only 2 XFP 10-GbE ports±Duplex±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.44 lb. (2.92 kg)
	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 7500 48-port Gig-T Module (JD210A)	Ports	48 RJ-45 autosensing 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.81 lb. (3.09 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 7500 48-port GbE SFP Module (JD211B)	Ports	48 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.7 lb. (3.04 kg)
	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 7500 24-port GbE SFP Module with 8 Combo Ports (JD223A)	Ports	16 SFP 100/1000 Mbps ports 8 dual-personality ports [†] 1000M Combo ports (SFP or RJ-45)	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.11 lb. (2.77 kg)
	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 7500 40-port Gig-T / 8-port SFP PoE-ready Module (JD228B)	Ports	40 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 802.3af PoE) [†] Duplex [‡] 10BASE-T/100BASE-TX [‡] half or full [†] 1000BASE-T [‡] full only 8 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.66 lb. (3.02 kg)
	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 7500 8-port 10G SFP+ Module (JF290A)	Ports	8 SFP+ 10-GbE ports [†] Duplex [‡] full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.97 lb. (3.16 kg)
	Notes	The module (JF290A) only support 10-GbE SFP+ transceiver, not support 1GbE SFP transceiver.	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		

Accessory Product Details

HP 7500 20-port Gig-T / 4-port GbE Combo PoE-upgradable SC Module (JC669A)	Physical characteristics	20 RJ-45 auto-negotiating 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only 4 dual-personality ports±Each composed of a 10/100/1000Base-T Gigabit Ethernet port and an SFP port, which cannot be simultaneously used
	Services	Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 6.17 lb. (2.8 kg) 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 7500 8-port 10GbE XFP Extended Module (JD191A)	Physical characteristics	8 XFP 10-GbE ports±Duplex±full only Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 7.12 lb. (3.23 kg)
	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 7500 48-port Gig-T PoE+ Extended Module (JD229B)	Physical characteristics	48 RJ-45 autosensing 10/100/1000 PoE+ ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 7.3 lb. (3.31 kg)
	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 7500 24-port GbE SFP / 2-port 10GbE XFP Extended Module (JD230A)	Physical characteristics	16 SFP 1000 Mbps ports 8 dual-personality ports±1000M Combo ports (SFP or RJ-45) 2 XFP 10-GbE ports±Duplex±full only Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 6.79 lb. (3.08 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP 7500 24-port GbE SFP Extended Module (JD234A)	Ports	16 SFP 100/1000 Mbps ports	
		8 dual-personality ports [†] 8 1000M Combo ports (SFP or RJ-45)	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.64 lb. (3.01 kg)
	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 7500 4-port 10GbE XFP Extended Module (JD235A)	Ports	4 XFP 10-GbE ports [†] Duplex [‡] full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.46 lb. (2.93 kg)
	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 7500 2-port 10GbE XFP Extended Module (JD236A)	Ports	2 XFP 10-GbE ports [†] Duplex [‡] full only	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	6.46 lb. (2.93 kg)
	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 7500 48-port GbE SFP Extended Module (JD237A)	Ports	48 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	7.16 lb. (3.25 kg)
	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 7500 48-port GbE SFP Enhanced Module (JD221A)	Ports	48 SFP 100/1000 Mbps ports	
	Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm)
		Weight	7.16 lb. (3.25 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 7500 24-port GbE SFP Enhanced Module (JD231A)	Ports	16 XFP 100/1000 Mbps ports 8 dual-personality ports [†] 1000M Combo ports (SFP or RJ-45)
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 6.7 lb. (3.04 kg)
	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 7500 24-port GbE SFP Enhanced Module (JD231A)	Ports	16 XFP 100/1000 Mbps ports 8 dual-personality ports [†] 1000M Combo ports (SFP or RJ-45)
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 6.7 lb. (3.04 kg)
	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 7500 2-port 10GbE XFP Enhanced Module (JD233A)	Ports	2 XFP 10-GbE ports [†] Duplex [‡] =full only
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.57(h) in. (35.5 x 37.7 x 4 cm) Weight 6.46 lb. (2.93 kg)
	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 X124 1G SFP LC LH40 1310nm Transceiver (JD061A) A small form-factor pluggable SFP Gigabit LH40 transceiver that provides a full duplex Gigabit solution up to 40km on a single-mode fiber.	Ports	1 LC 1000Base-LH port (no IEEE standard exists for 1550 nm optics)
	Connectivity	Connector type LC Wavelength 1310 nm
	Physical characteristics	Dimensions 2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm) Full configuration weight 0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical 0.8 W Power consumption maximum 1.0 W
	Cabling	Cable type [‡] Single-mode fiber optic, complying with ITU-T G.652 [‡] Maximum distance [‡] <ul style="list-style-type: none"> • 40km distance
	Services	Fiber type Single Mode Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A)	Ports	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
A small form-factor pluggable (SFP) Gigabit LH40 transceiver that provides a full-duplex Gigabit solution up to 40 km on a single mode fiber.	Physical characteristics	Wavelength	1550 nm
		Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
Electrical characteristics	Power consumption typical	0.8 W	
	Power consumption maximum	1.0 W	
Cabling	Cable type	Single-mode fiber optic, complying with ITU-T G.652 ⁺	
	Maximum distance	<ul style="list-style-type: none"> • 40km distance 	
Services	Fiber type	Single Mode	
	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 X125 1G SFP LC LH70 Transceiver (JD063B)	Ports	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
A small form-factor pluggable (SFP) Gigabit LH70 transceiver that provides a full-duplex Gigabit solution up to 70km on a single-mode fiber.	Physical characteristics	Wavelength	1550 nm
		Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
Electrical characteristics	Power consumption typical	0.8 W	
	Power consumption maximum	1.0 W	
Cabling	Cable type	Single-mode fiber optic, complying with ITU-T G.652 ⁺	
	Maximum distance	<ul style="list-style-type: none"> • 70km 	
Services	Fiber type	Single Mode	
	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		

Accessory Product Details

<p>HP X125 1G SFP RJ45 T Transceiver (JD089B)</p> <p>A small form factor pluggable (SFP) Gigabit 1000Base-T transceiver that provides a full duplex Gigabit solution up to 100m on a Cat-5+ cable.</p>	Ports	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T)
	Connectivity	Connector type RJ-45
	Physical characteristics	Dimensions 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)
	Electrical characteristics	Full configuration weight 0.07 lb. (0.03 kg)
		Power consumption typical 0.8 W
		Power consumption maximum 1.0 W
	Cabling	Cable type ⁻ 1000BASE-T ⁻ Category 5 (5E or better recommended), 100 $\bar{\text{T}}$ differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T ⁺
		Maximum distance ⁻ • 100m
	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.

<p>HP X120 1G SFP LC BX 10-U Transceiver (JD098B)</p> <p>A small form-factor pluggable (SFP) Gigabit LX-BX10-U transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable.</p>	Ports	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U) ⁺ Duplex ⁻ full only
	Connectivity	Connector type LC
	Physical characteristics	Dimensions 2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
	Electrical characteristics	Full configuration weight 0.04 lb. (0.02 kg)
		Power consumption typical 0.8 W
		Power consumption maximum 1.0 W
	Cabling	Maximum distance ⁻ • 10km
		Fiber type Single Mode
	Notes	TX 1310nm RX 1490nm
	Services	Refer to the HP website at ⁻ www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

<p>HP X120 1G SFP LC BX10-D Transceiver (JD099B)</p> <p>A small form-factor pluggable (SFP) Gigabit LX-BX10-D transceiver that provides a full duplex Gigabit solution up to 10km on a single mode cable.</p>	Ports	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D)†Duplex= full only		
	Connectivity	Connector type	LC	
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)	
		Full configuration weight	0.04 lb. (0.02 kg)	
	Electrical characteristics	Power consumption typical	0.8 W	
		Power consumption maximum	1.0 W	
	Cabling	Maximum distance=	• Up to 10km	
		Fiber type	Single Mode	
	Notes	TX 1490nm RX 1310nm		
	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.		

<p>HP X120 1G SFP LC LH100 Transceiver (JD103A)</p> <p>A small form factor pluggable (SFP) Gigabit LH100 transceiver that provides a full-duplex Gigabit solution up to 100km on a single mode fiber.</p>	Ports	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)		
	Connectivity	Connector type	LC	
		Wavelength	1550 nm	
	Electrical characteristics	Power consumption typical	0.8 W	
		Power consumption maximum	1.0 W	
	Cabling	Cable type=	Single-mode fiber optic, complying with ITU-T G.652‡	
		Maximum distance=	• Up to 100km	
		Fiber type	Single Mode	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		

Accessory Product Details

HP X120 1G SFP LC SX Transceiver (JD118B) A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on a Multimode fiber.	Ports	1 LC 1000BASE-SX port	
	Connectivity	Connector type LC	
	Physical characteristics	Wavelength	850 nm
		Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance ²	<ul style="list-style-type: none"> • FDDI Grade distance = 220m • OM1 = 275m • OM2 = 500m • OM3 = Not Specified by standard
		Cable length	up to 550m
		Fiber type	Multi Mode
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 X120 1G SFP LC LX Transceiver (JD119B) A small form-factor pluggable (SFP) Gigabit LX transceiver that provides a full duplex Gigabit solution up to 550m on MMF or 10Km on SMF	Ports	1 SFP 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX)	
	Connectivity	Connector type LC	
	Physical characteristics	Wavelength	1300 nm
		Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type ²	Either single mode or multimode ³
		Maximum distance ²	<ul style="list-style-type: none"> • 550m for Multimode • 10km for Singlemode
		Fiber type	Both
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		

Accessory Product Details

HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A) **Cabling**

Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m[±]

Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m

Notes

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

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

Services

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

HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A) **Cabling**

Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m[±]

Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m

Notes

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

- Dimensions—Core diameter—50 ± 3.0µm Cladding diameter—125 ± 2.0µm Coating diameter—245 ± 10µm
- Optical Glass Bandwidth—For LED sources—1500/500 MHz-km @850/1300nm.
- Optical Glass—For Laser sources—2000/500 MHz-km @850/1300nm. VCSEL Laser sources—Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE—The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION—

Accessory Product Details

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

Services

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

HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)

Cabling

Cable type=

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

Maximum distance=

10Gbps Transfer Rate (Ethernet)=300m

Notes

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

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

Services

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

Accessory Product Details

**HP 5 m Multimode OM3
LC/LC Optical Cable
(AJ836A)**

Cabling

Cable type

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

Maximum distance

10Gbps Transfer Rate (Ethernet) 300m

Notes

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

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

Services

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

**HP 2 m Multimode OM3
LC/LC Optical Cable
(AJ835A)**

Cabling

Cable type

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

Maximum distance

10Gbps Transfer Rate (Ethernet) 300m

Notes

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

- Dimensions Core diameter 50 ± 3.0um Cladding diameter 125 ± 2.0um Coating diameter 245 ± 10um
- Optical Glass Bandwidth For LED sources 1500/500 MHz-km @850/1300nm.
- Optical Glass For Laser sources 2000/500 MHz-km @850/1300nm. VCSEL Laser sources Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.

Accessory Product Details

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

Services

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

HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)

Cabling

Cable type=

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

Maximum distance=

10Gbps Transfer Rate (Ethernet)= 300m

Notes

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

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

Services

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

Accessory Product Details

HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A) **Cabling**

Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m

Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m

Notes

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

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

Services

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

HP 1 m PremierFlex OM3+ LC/LC Optical Cable (BK838A) **Notes**

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

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

Services

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

Accessory Product Details

HP 10500/7500 20G Unified Wired-WLAN Module (JG639A)

Ports	1 RJ-45 serial console port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only	
	1 RJ-45 out-of-band management port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)±Duplex±10BASE-T/100BASE-TX±half or full±1000BASE-T±full only	
Physical characteristics	Dimensions	15.71(w) x 13.98(d) x 1.57(h) in (39.9 x 35.5 x 4.0 cm) (1U height)
	Weight	7.98 lb (3.62 kg)
Memory and processor	Processor	Eight core @ 950 MHz, 1 GB compact flash, 2 GB DDR2 DIMM
Performance	Switch fabric speed	10 Gbps
	MAC address table size	24000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing
Electrical characteristics	Maximum heat dissipation	512 BTU/hr (540.16 kJ/hr)
	Maximum power rating	150 W
	Notes	Power consumption±118 W-150 W
Safety	UL 60950-1±CAN/CSA 22.2 No. 60950-1±IEC 60950-1±EN 60950-1±FDA 21 CFR Subchapter J	
Emissions	EN 55022 Class A±CISPR 22 Class A±ICES-003 Class A±AS/NZS CISPR 22 Class A±EN 61000-3-2±EN 61000-3-3±VCCI-3 CLASS A±VCCI-4 CLASS A±ETSI EN 300 386±FCC Part 15 (CFR 47) CLASS A	
Immunity	EN	EN 55024, CISPR24 & ETSI EN 300 386
Management	IMC - Intelligent Management Center±command-line interface±Web browser±SNMP Manager±Telnet±HTTPS±RMON1±FTP±in-line and out-of-band±IEEE 802.3 Ethernet MIB±Ethernet Interface MIB	
Features	<p>For use in HP 10500 Switch Series and HP 7500 Switch Series</p> <p>Default supported APs±128</p> <p>Maximum supported APs±1,024 (via the optional purchase of the 128-Access Point E-LTU)</p> <p>Maximum supported users±20,000</p> <p>Maximum supported users via local portal authentication±4,000</p> <p>Maximum supported users via local authentication±1,000</p> <p>Maximum supported configured SSIDs±512</p> <p>Maximum supported ACLs±32,000</p> <p>Supported MSM APs are automatically discovered, Comware firmware is loaded, and the APs can be fully managed.</p>	
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

General protocols

RFC 768 UDP
 RFC 791 IP
 RFC 792 ICMP
 RFC 793 TCP
 RFC 826 ARP
 RFC 854 TELNET

RFC 2461 IPv6 Neighbor Discovery
 RFC 2462 IPv6 Stateless Address Auto-configuration
 RFC 2463 ICMPv6
 RFC 2464 Transmission of IPv6 over Ethernet Networks
 RFC 2465 Management Information Base for IP Version 6±Textual Conventions and General

IEEE 802.11i Medium Access Control (MAC) Security Enhancements
 IEEE 802.11n WLAN Enhancements for Higher Throughput
 Note±All of the above standards are now included in IEEE 802.11-2012

Network management

RFC 1155 Structure of Management



Accessory Product Details

RFC 855 Telnet Option Specification
 RFC 858 Telnet Suppress Go Ahead Option
 RFC 894 IP over Ethernet
 RFC 950 Internet Standard Subnetting Procedure
 RFC 959 File Transfer Protocol (FTP)
 RFC 1122 Host Requirements
 RFC 1141 Incremental updating of the Internet checksum
 RFC 1144 Compressing TCP/IP headers for low-speed serial links
 RFC 1256 ICMP Router Discovery Protocol (IRDP)
 RFC 1321 The MD5 Message-Digest Algorithm
 RFC 1334 PPP Authentication Protocols (PAP)
 RFC 1350 TFTP Protocol (revision 2)
 RFC 1812 IPv4 Routing
 RFC 1944 Benchmarking Methodology for Network Interconnect Devices
 RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
 RFC 2104 HMAC-Keyed-Hashing for Message Authentication
 RFC 2246 The TLS Protocol Version 1.0
 RFC 2284 EAP over LAN
 RFC 2644 Directed Broadcast Control
 RFC 2864 The Inverted Stack Table Extension to the Interfaces Group MIB
 RFC 2866 RADIUS Accounting
 RFC 2869 RADIUS Extensions
 RFC 3268 Advanced Encryption Standard (AES)
 Ciphersuites for Transport Layer Security (TLS)
 RFC 3619 Ethernet Automatic Protection Switching (EAPS)

IP multicast

RFC 1112 IGMP
 RFC 2236 IGMPv2
 RFC 2934 Protocol Independent Multicast MIB for IPv4

IPv6

RFC 1350 TFTP
 RFC 1881 IPv6 Address Allocation Management
 RFC 1887 IPv6 Unicast Address Allocation Architecture

Group (partially support, only IPv6 Interface Statistics table)
 RFC 2466, Management Information Base for IP Version 6 - ICMPv6
 RFC 2526 Reserved IPv6 Subnet Anycast Addresses
 RFC 2553 Basic Socket Interface Extensions for IPv6
 RFC 2563 ICMPv6
 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
 RFC 3315 DHCPv6 (client and relay)
 RFC 3363 DNS support
 RFC 3484 Default Address Selection for IPv6
 RFC 3493 Basic Socket Interface Extensions for IPv6
 RFC 3513 IPv6 Addressing Architecture
 RFC 3542 Advanced Sockets API for IPv6
 RFC 3587 IPv6 Global Unicast Address Format
 RFC 3596 DNS Extension for IPv6
 RFC 4193, Unique Local IPv6 Unicast Addresses
 RFC 4443 ICMPv6
 RFC 4541 IGMP & MLD Snooping Switch
 RFC 4861 IPv6 Neighbor Discovery
 RFC 4862 IPv6 Stateless Address Auto-configuration
 RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

MIBs

RFC 1229 Interface MIB Extensions
 RFC 1643 Ethernet MIB
 RFC 1757 Remote Network Monitoring MIB
 RFC 2011 SNMPv2 MIB for IP
 RFC 2012 SNMPv2 MIB for TCP
 RFC 2013 SNMPv2 MIB for UDP
 RFC 2571 SNMP Framework MIB
 RFC 2572 SNMP-MPD MIB
 RFC 2613 SMON MIB
 RFC 2863 The Interfaces Group MIB
 RFC 2932 IP (Multicast Routing MIB)
 RFC 2933 IGMP MIB

Mobility

IEEE 802.11a High Speed Physical Layer in the 5 GHz Band
 IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band
 IEEE 802.11d Global Harmonization
 IEEE 802.11e QoS enhancements
 IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band

Information
 RFC 1905 SNMPv2 Protocol Operations
 RFC 2573 SNMPv3 Applications
 RFC 2574 SNMPv3 User-based Security Model (USM)
 RFC 2575 VACM for SNMP
 SNMPv1/v2c

QoS/CoS

RFC 2474 DS Field in the IPv4 and IPv6 Headers
 RFC 2474 DSCP DiffServ
 RFC 2475 DiffServ Architecture
 RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP
 WiFi MultiMedia (WMM), IEEE 802.11e

Security

IEEE 802.1X Port Based Network Access Control
 RFC 3394 Advanced Encryption Standard (AES) Key Wrap Algorithm
 RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
 Access Control Lists (ACLs)
 Guest VLAN for 802.1x
 Secure Sockets Layer (SSL)
 SSHv2 Secure Shell
 Web Authentication
 WPA (Wi-Fi Protected Access)/WPA2

IKEv1

RFC 3748 - Extensible Authentication Protocol (EAP)

Accessory Product Details

RFC 1981 IPv6 Path MTU Discovery
 RFC 2292 Advanced Sockets API for IPv6
 RFC 2373 IPv6 Addressing Architecture
 RFC 2375 IPv6 Multicast Address Assignments
 RFC 2460 IPv6 Specification
 IEEE 802.11h Dynamic Frequency Selection

HP 7500 Access Controller Module (JD440A)

Ports	1 RJ-45 serial console port 1 RJ-45 out-of-band management port 2 USB 1.0 12 Mbps ports	
Physical characteristics	Dimensions	14.45(d) x 13.39(w) x 1.6(h) in. (36.7 x 34 x 4.06 cm) (1U height)
	Weight	7.28 lb. (3.3 kg)
Memory and processor	Processor	Eight core @ 950 MHz, 256 MB compact flash, 1 GB DDR2 DIMM
Performance	Switch fabric speed	20 Gbps
	MAC address table size	24000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing
Electrical characteristics	Maximum heat dissipation	273 BTU/hr (288.02 kJ/hr)
	Maximum power rating	80 W
Safety	UL 60950-1 7EN 60950-1 7CAN/CSA-C22.2 No. 60950-1 7Anatel 7GOST 7C-Tick 7NOM 7IEC 60950-1 (with CB report)	
Emissions	EN 55022 7VCCI 7ICES-003 7AS/NZS CISPR 22 7EN 300 386 7FCC Part 15 7EN 61000-3-2 72006 7EN 61000-3-3 71995 +A1 72001+A2 72005 7EMC Directive 2004/108/EC	
Immunity	EN	EN 61000-4-2 71995+A1 71998+A2 72001 7EN 61000-4-3 72006 7EN 61000-4-4 72004 7EN 61000-4-5 72006 7EN 61000-4-6 71996 +A1 72001 A2 72007 7EN 61000-4-8 72001 7EN 61000-4-11 72004 7EN 55024 71998 + A1 72001 + A2 72003
Management	IMC - Intelligent Management Center 7command-line interface 7Web browser 7configuration menu 7SNMP Manager 7Telnet 7HTTPS 7RMON1 7FTP 7in-line and out-of-band 7IEEE 802.3 Ethernet MIB 7Ethernet Interface MIB	
Features	A7500 ACM License system - The A7500 ACM is an access controller module for the HP A7500 series Ethernet switches. It supports 12 APs by default. After license upgrade, the access controller module can support up to 640 APs.	
Notes	Max. number of users 720K. Max. number of users that are supported by local authentication 71K. Max. number of SSIDs that can be configured 7512. Max. number of users that are supported by local portal authentication 74K. Number of ACLs 732K.	
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	General protocols	MIBs
	RFC 768 UDP	RFC 1229 Interface MIB Extensions
	RFC 791 IP	RFC 1643 Ethernet MIB
	RFC 792 ICMP	RFC 1757 Remote Network Monitoring MIB
	RFC 793 TCP	RFC 2011 SNMPv2 MIB for IP
	RFC 826 ARP	RFC 2012 SNMPv2 MIB for TCP

Accessory Product Details

RFC 854 TELNET
 RFC 855 Telnet Option Specification
 RFC 858 Telnet Suppress Go Ahead Option
 RFC 894 IP over Ethernet
 RFC 950 Internet Standard Subnetting Procedure
 RFC 959 File Transfer Protocol (FTP)
 RFC 1122 Host Requirements
 RFC 1141 Incremental updating of the Internet checksum
 RFC 1144 Compressing TCP/IP headers for low-speed serial links
 RFC 1256 ICMP Router Discovery Protocol (IRDP)
 RFC 1321 The MD5 Message-Digest Algorithm
 RFC 1334 PPP Authentication Protocols (PAP)
 RFC 1350 TFTP Protocol (revision 2)
 RFC 1812 IPv4 Routing
 RFC 1944 Benchmarking Methodology for Network Interconnect Devices
 RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
 RFC 2104 HMAC-⁺Keyed-Hashing for Message Authentication
 RFC 2246 The TLS Protocol Version 1.0
 RFC 2284 EAP over LAN
 RFC 2644 Directed Broadcast Control
 RFC 2864 The Inverted Stack Table Extension to the Interfaces Group MIB
 RFC 2866 RADIUS Accounting
 RFC 2869 RADIUS Extensions
 RFC 3268 Advanced Encryption Standard (AES) Ciphersuites for Transport Layer Security (TLS)
 RFC 3619 Ethernet Automatic Protection Switching (EAPS)

IP multicast

RFC 1112 IGMP
 RFC 2236 IGMPv2
 RFC 2934 Protocol Independent Multicast MIB for IPv4

IPv6

RFC 1350 TFTP
 RFC 1881 IPv6 Address Allocation Management
 RFC 1887 IPv6 Unicast Address Allocation Architecture
 RFC 1981 IPv6 Path MTU Discovery
 RFC 2292 Advanced Sockets API for IPv6
 RFC 2373 IPv6 Addressing Architecture
 RFC 2375 IPv6 Multicast Address Assignments
 RFC 2460 IPv6 Specification
 RFC 2461 IPv6 Neighbor Discovery
 RFC 2462 IPv6 Stateless Address Auto-configuration
 RFC 2463 ICMPv6
 RFC 2464 Transmission of IPv6 over Ethernet Networks
 RFC 2526 Reserved IPv6 Subnet Anycast Addresses
 RFC 2563 ICMPv6
 RFC 2925 Definitions of Managed Objects for

RFC 2013 SNMPv2 MIB for UDP
 RFC 2571 SNMP Framework MIB
 RFC 2572 SNMP-MPD MIB
 RFC 2613 SMON MIB
 RFC 2863 The Interfaces Group MIB
 RFC 2933 IGMP MIB

Mobility

IEEE 802.11a High Speed Physical Layer in the 5 GHz Band
 IEEE 802.11b Higher-Speed Physical Layer Extension in the 2.4 GHz Band
 IEEE 802.11d Global Harmonization
 IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band
 IEEE 802.11i Medium Access Control (MAC) Security Enhancements
 IEEE 802.11n WLAN Enhancements for Higher Throughput

Network management

RFC 1155 Structure of Management Information
 RFC 1905 SNMPv2 Protocol Operations
 RFC 2573 SNMPv3 Applications
 RFC 2574 SNMPv3 User-based Security Model (USM)
 RFC 2575 VACM for SNMP
 SNMPv1/v2c

QoS/CoS

RFC 2474 DS Field in the IPv4 and IPv6 Headers
 RFC 2474 DSCP DiffServ
 RFC 2475 DiffServ Architecture
 RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP
 WiFi MultiMedia (WMM), IEEE 802.11e

Security

IEEE 802.1X Port Based Network Access Control
 RFC 3394 Advanced Encryption Standard (AES) Key Wrap Algorithm
 RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
 Access Control Lists (ACLs)
 Guest VLAN for 802.1x
 Secure Sockets Layer (SSL)
 SSHv1.5 Secure Shell
 SSHv2 Secure Shell
 Web Authentication
 WPA (Wi-Fi Protected Access)/WPA2

KEv1

RFC 3748 - Extensible Authentication Protocol (EAP)

Accessory Product Details

Remote Ping, Traceroute, and Lookup Operations (Ping only)
 RFC 3484 Default Address Selection for IPv6
 RFC 3587 IPv6 Global Unicast Address Format
 RFC 4443 ICMPv6
 RFC 4541 IGMP & MLD Snooping Switch
 RFC 4861 IPv6 Neighbor Discovery
 RFC 4862 IPv6 Stateless Address Auto-configuration
 RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

HP TippingPoint S1200N IPS A7500 Module
(JC527A)

Ports	2 SFP 1000 Mbps ports 2 RJ-45 1000 Mbps ports 1 Compact Flash port 1 RJ-45 serial console port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) Duplex=10BASE-T/100BASE-TX=half or full=1000BASE-T=full only
Physical characteristics	Dimensions 13.7(d) x 15.7(w) x 1.6(h) in. (34.8 x 39.88 x 4.06 cm) Weight 7.7 lb. (3.49 kg), Fully loaded
Electrical characteristics	Throughput up to 1.3 Gbps IPS/IDS throughput 1.3 Gbps inspected throughput Concurrent sessions 6,500,000 New sessions/second 78K
Environment	Operating temperature 32°F to 113°F (0°C to 45°C) Operating relative humidity 10% to 95%, noncondensing Nonoperating/Storage temperature -20°F to 45°F (-28.9°C to 7.2°C)
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	Denial of service protection Automatic filtering of well-known denial-of-service packets Rate Limiting by ACLs IPv6 RFC 2460 IPv6 Specification

HP 7500 384Gbps Fabric Module with 2 XFP Ports
(JD193B)

Ports	1 RJ-45 dual-personality port=One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)=Duplex=half or full 1 Compact Flash port 2 XFP 10-GbE ports= Duplex=full only
Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.77(h) in. (35.5 x 37.7 x 4.5 cm) Weight 7.94 lb. (3.6 kg)
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP 7500 384Gbps Fabric Module (JD194B)	Ports	1 RJ-45 dual-personality port [†] One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) [†] Duplex [†] half or full 1 Compact Flash port
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.77(h) in. (35.5 x 37.7 x 4.5 cm)
		Weight 7.94 lb. (3.6 kg)
	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 7500 384Gbps Advanced Fabric Module (JD195A)	Ports	1 RJ-45 dual-personality port [†] One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) [†] Duplex [†] half or full 1 Compact Flash port
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.77(h) in. (35.5 x 37.7 x 4.5 cm)
		Weight 7.94 lb. (3.6 kg)
	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 7500 768Gbps Fabric Module (JD220A)	Ports	1 RJ-45 dual-personality port [†] One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) [†] Duplex [†] half or full 1 Compact Flash port
	Physical characteristics	Dimensions 13.98(d) x 14.84(w) x 1.77(h) in. (35.5 x 37.7 x 4.5 cm)
		Weight 7.85 lb. (3.56 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP 7500 1400W DC Power Supply (JD208A)	Physical characteristics	Dimensions	7.72(w) x 14.06(d) x 5.04(h) in (19.6 x 35.7 x 12.8 cm) (3U height)
		Weight	20.39 lb (9.25 kg)
	Electrical characteristics	Voltage	0~-48/-60V
		Current	0/50 A
		Idle power	168 W
		Maximum power rating	1400 W
		PoE power	140 W
		Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
	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 7500 1400W AC Power Supply (JD218A)	Physical characteristics	Dimensions	7.72(w) x 14.06(d) x 5.04(h) in (19.6 x 35.7 x 12.8 cm) (3U height)
		Weight	14 lb (6.35 kg)
	Electrical characteristics	Voltage	100-120/200-240 VAC
		Current	0/16 A
		Idle power	196 W
		Maximum power rating	1400 W
		PoE power	0 W
		Frequency	50/60 Hz
	Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 1400W AC Power Supply uses a 16-A AC power cable.	
	Notes	US order needs to indicate either #ABA option (for 110V) or #B2E (for 220V). This will determine which power cord the distribution centres include with the product.	
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		

Accessory Product Details

HP 7500 6000W AC Power Supply (JD227A)	Physical characteristics	Dimensions	7.72(w) x 14.06(d) x 5.04(h) in (19.6 x 35.7 x 12.8 cm) (3U height)
		Weight	28.22 lb (12.8 kg)
	Electrical characteristics	Voltage	100-120/200-240 VAC
		Current	0/16 A
		Idle power	105 W
		Maximum power rating	6000 W
		PoE power	5300 W
		Frequency	50/60 Hz
		Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 6000W AC Power Supply uses a 16-A AC power cable.
	Notes	US order needs to indicate either #ABA option (for 110V) or #B2E (for 220V). This will determine which power cord the distribution centres include with the product.	
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 7503 Fabric Module with 24 GbE Ports (JD222A)	Ports	1 RJ-45 dual-personality port [†] One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX) [†] Duplex [†] half or full 16 SFP 100/1000 Mbps ports 8 dual-personality ports [†] Combo ports (RJ45 or SFP)	
	Physical characteristics	Dimensions	14.84(w) x 13.98(d) x 1.77(h) in (37.7 x 35.5 x 4.5 cm)
		Weight	6.17 lb (2.8 kg)
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 7503-S 144 Gbps Fabric Ports / Main Processing Unit with PoE-upgradable 20p Gig-T / 4p GbE Combo (JC666A)

1 RJ-45 serial console port[†]One console port, used for local or remote configuration and management of the switch through a dialup connection
 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)[†]Duplex[†]half or full
 20 RJ-45 auto-negotiating 10/100/1000 PoE ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3af PoE)[†]Duplex[†]10BASE-T/100BASE-TX[†]half or full[†]1000BASE-T[†]full only
 4 dual-personality ports[†]each of which consists of a 10/100/1000Base-T port and an SFP port. The two ports comprising a Combo port cannot operate at the same time.

Physical characteristics	Dimensions	13.98(w) x 14.84(d) x 1.77(h) in (35.51 x 37.69 x 4.5 cm)
	Weight	6.31 lb (2.86 kg)
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 7503-S 144 Gbps TAA Fabric/Main Processing Unit with 16 GbE SFP Ports and 8 GbE Combo Ports (JC698A)

1 RJ-45 dual-personality port[†]One console port, used for local or remote configuration and management
 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)[†]Duplex[†]half or full
 16 SFP 100/1000 Mbps ports
 8 dual-personality ports[†]Combo ports (RJ45 or SFP)

Physical characteristics	Dimensions	13.98(d) x 14.84(w) x 1.77(h) in. (35.5 x 37.7 x 4.5 cm)
	Weight	6.17 lb. (2.8 kg)
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 7500 650W AC Power Supply (JD217A)

Physical characteristics	Dimensions	5.51(w) x 13.78(d) x 1.57(h) in (14 x 35 x 4 cm) (1U height)
	Weight	5.34 lb (2.42 kg)
Electrical characteristics	Voltage	100-120/200-240 VAC
	Current	0/10 A
	Idle power	97.5 W
	Maximum power rating	650 W
	PoE power	0 W
	Frequency	50/60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 650W AC Power Supply uses a 10-A AC power cable	

Accessory Product Details

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

HP 7500 650W DC Power Supply (JD209A)	Physical characteristics	Dimensions	5.51(w) x 13.78(d) x 1.57(h) in (14 x 35 x 4 cm) (1U height)
		Weight	4.96 lb (2.25 kg)
	Electrical characteristics	Voltage	0~-48/-60V
		Current	0/25 A
		Idle power	97.5 W
		Maximum power rating	650 W
		PoE power	0 W
		Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
		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 7502 300W AC Power Supply (JD226A)	Physical characteristics	Dimensions	5.51(w) x 13.78(d) x 1.57(h) in (14 x 35 x 4 cm) (1U height)
		Weight	4.17 lb (1.89 kg)
	Electrical characteristics	Voltage	100-120/200-240 VAC
		Current	0/5 A
		Idle power	54 W
		Maximum power rating	300 W
		PoE power	0 W
		Frequency	50/60 Hz
		Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. 300W AC Power Supply uses a 10-A AC power cable
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

Accessory Product Details

HP 7502 Fabric Module (JD196A)	Ports	1 RJ-45 dual-personality port+One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)+Duplex=half or full 1 Compact Flash port	
	Physical characteristics	Dimensions	7.83(w) x 13.98(d) x 1.77(h) in (19.9 x 35.5 x 4.5 cm)
	Services	Weight	2.98 lb. (1.35 kg)
		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 7502 TAA-compliant Main Processing Unit (JC697A)	Ports	1 RJ-45 dual-personality port+One console port, used for local or remote configuration and management 1 RJ-45 autosensing 10/100 port (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX)+Duplex=half or full 1 Compact Flash port	
	Physical characteristics	Dimensions	13.98(d) x 7.83(w) x 1.77(h) in. (35.5 x 19.9 x 4.5 cm)
	Services	Weight	2.98 lb. (1.35 kg)
		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 7500 4-port 40GbE QSFP+ SC Module (JC792A)	Physical characteristics	Dimensions	10.08(w) x 11.73(d) x 1.57(h) in (25.6 x 29.8 x 4 cm)
		Weight	6.88 lb (3.12 kg)
	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 7500 4-port 40GbE CFP SC Module (JG373A)	Physical characteristics	Dimensions	16.77(w) x 11.73(d) x 1.57(h) in (42.6 x 29.8 x 4 cm)
		Weight	7.63 lb (3.46 kg))
	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.	

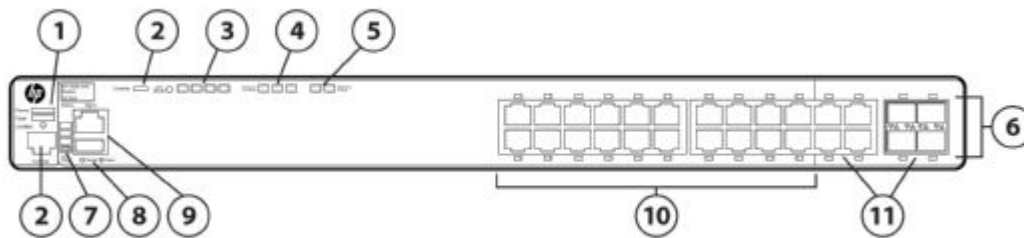
To learn more, visit www.hp.com/networking

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Overview

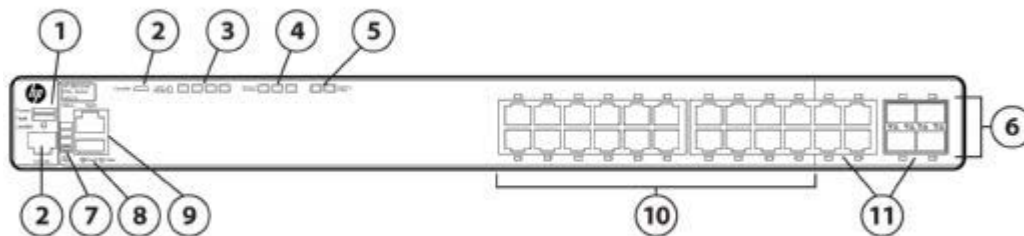
Models

HP 2920-24G Switch	J9726A
HP 2920-24G-PoE+ Switch	J9727A
HP 2920-48G Switch	J9728A
HP 2920-48G-PoE+ Switch	J9729A
HP 2920-48G-PoE+ 740W Switch	J9836A



HP 2920-24G Switch

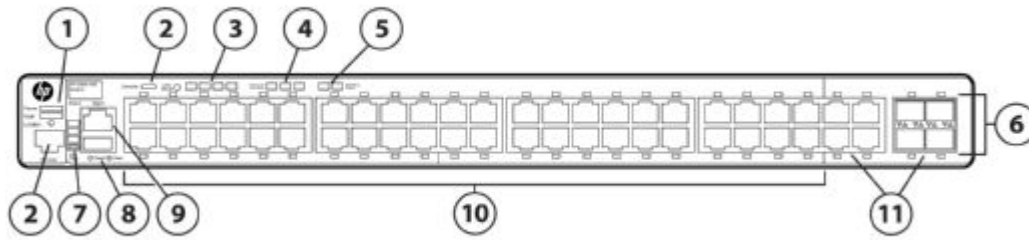
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|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



HP 2920-24G-PoE+ Switch

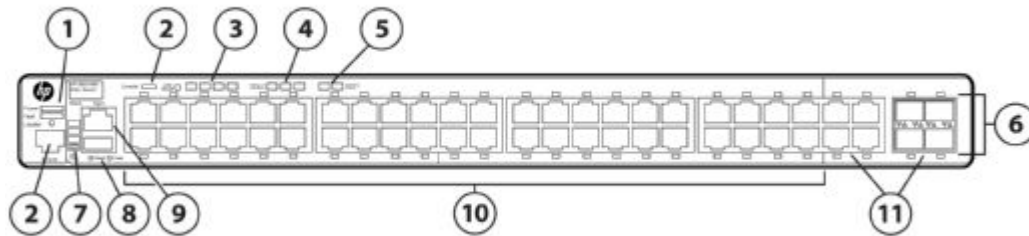
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|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|

Overview



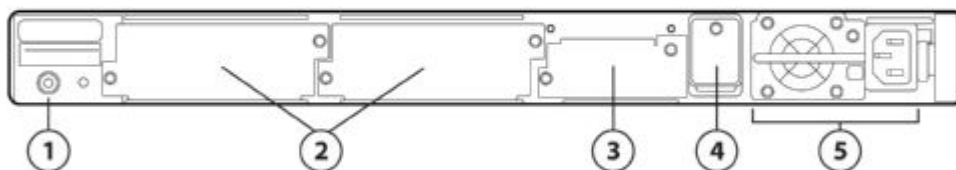
HP 2920-48G Switch

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



HP 2920-48G-PoE+ Switch HP 2920-48G-PoE+ 740W Switch

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Power, Fault, and Locator LEDs 2. Console ports 3. LED Mode button and indicator LEDs 4. Status LEDs for components on the back of the switch 5. Stacking status LEDs 6. Switch port LEDs | <ol style="list-style-type: none"> 7. PoE, Tmp (Temperature), Test, Fan, and Aux (Auxiliary) port status LED 8. Reset and Clear buttons 9. Aux port and Out-of-Band Management port 10. 10/100/1000BASE-T PoE+ RJ-45 ports 11. Dual-Personality (10/100/1000BASE-T or SFP) ports |
|---|---|



HP 2920 Switch Series Rear (All)

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Grounding lug mounting hole | <ol style="list-style-type: none"> 4. XPS Connector |
|--|--|

Overview

2. 10G Expansion Module slots
3. Stacking Module Slot
5. Power Supply and AC power connector

Product overview

The HP 2920 Switch Series consists of five switches—the HP 2920-24G and 2920-24G-PoE+ Switches with 24 10/100/1000 ports, and the HP 2920-48G and 2920-48G-PoE+ and 2920-48G 740W PoE+ Switches with 48 10/100/1000 ports. Each switch has four dual-personality ports for 10/100/1000 or SFP connectivity.

In addition, the 2920 switch series supports up to four optional 10 Gigabit Ethernet (SFP+ and/or 10GBASE-T) ports, as well as a two-port stacking module. These options provide you with flexible and easy-to-deploy uplinks and stacking.

Together with static and RIP routing, robust security and management, enterprise-class features, free lifetime warranty, and free software updates, the 2920 switch series is a cost-effective, scalable solution for customers who are building high-performance networks. These switches can be deployed at the enterprise edge, in remote branch offices, and in converged networks.

Key Features

- High-performance Gigabit Ethernet access switch
- Four optional 10GbE (SFP+ and/or 10GBASE-T) ports
- Stacking capability with a total of four switches
- Layer 2 and Layer 3 plus static and RIP routing, PoE, and PoE+ support
- Lifetime warranty, sFlow, ACLs, OpenFlow, and rate limiting

Features and Benefits

Quality of Service (QoS)

- **Traffic prioritization (IEEE 802.1p)**
allows real-time traffic classification into eight priority levels mapped to eight queues
- **Layer 4 prioritization**
enables prioritization based on TCP/UDP port numbers
- **Class of Service (CoS)**
sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Rate limiting**
sets per-port ingress enforced maximums and per-port, per-queue minimums
- **Large buffers**
provide graceful congestion management

Connectivity

- **Flexible 10 Gbps Ethernet connectivity**
up to four optional 10-Gigabit ports (SFP+ and/or 10GBASE-T)
- **Two-port stacking module with up to 40 Gbps/port**
optional two-port stacking module allows stacking of up to four switch units into a single virtual device
- **Auto-MDIX**
automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- **IPv6**
 - **IPv6 host**
allows the switches to be managed and deployed at the edge of IPv6 networks
 - **Dual stack (IPv4/IPv6)**
provides transition mechanism from IPv4 to IPv6—supports connectivity for both protocols
 - **MLD snooping**
forwards IPv6 multicast traffic to the appropriate interface—prevents IPv6 multicast traffic from flooding the network
- **IEEE 802.3at Power over Ethernet (PoE+)**

Overview

provide up to 30 W per port that allows support of the latest PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device—eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments

- **Pre-standard PoE support**
detects and provides power to pre-standard PoE devices
- **Dual-personality functionality**
includes four 10/100/1000 ports or SFP slots for optional fiber connectivity such as Gigabit-SX, -LX, and -LH, or 100-FX

Performance

- **Energy-efficient design**
 - **High-efficiency power supplies**
80 PLUS Silver Certified power supply increases power savings
 - **Energy-efficient Ethernet (EEE) support**
reduces power consumption in accordance with IEEE 802.3az
- **HP ProVision ASIC architecture**
is designed with the latest HP ProVision ASIC, providing very low latency, increased packet buffering, and adaptive power consumption
- **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

Software-defined networking

- **NEW 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

Convergence

- **IP multicast snooping and data-driven IGMP**
automatically prevent flooding of IP multicast traffic
- **LLDP-MED (Media Endpoint Discovery)**
defines a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
is an automated device discovery protocol that provides easy mapping of network management applications
- **PoE and PoE+ allocations**
support multiple methods (automatic, IEEE 802.3at dynamic, LLDP-MED fine grain, IEEE 802.3af device class, or user specified) to allocate and manage PoE/PoE+ power for more efficient energy savings
- **Local MAC Authentication**
assigns attributes such as VLAN and QoS using locally configured profile that can be a list of MAC prefixes

Resiliency and high availability

- **IEEE 802.1s Multiple Spanning Tree**
provides high link availability in multiple VLAN environments by allowing multiple spanning trees—provides legacy support for IEEE 802.1d and IEEE 802.1w
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HP port trunking**
support up to 60 static, dynamic, or distributed trunks active across a stack, with each trunk having up to eight links (ports) per static trunk—support trunking across stack members
- **Ring and chain stacking topology**
allows failure of a link or switch in the ring of stacked switches, while the remaining connected switches continue operation
- **New SmartLink**
provides easy-to-configure link redundancy of active and standby links

Management

●



Overview

- **SNMPv1, v2, and v3**
provide complete support of SNMP⁷provide full support of industry-standard Management Information Base (MIB) plus private extensions⁷SNMPv3 supports increased security using encryption
- **Out-of-band Ethernet management port**
enables management over a separate physical management network, keeping management traffic segmented from network data traffic

Manageability

- **Dual flash images**
provides independent primary and secondary operating system files for backup while upgrading
- **Friendly port names**
allow assignment of descriptive names to ports
- **Find-Fix-Inform**
finds and fixes common network problems automatically, then informs administrator
- **Multiple configuration files**
allow multiple configuration files to be stored to a flash image
- **Software updates**
free downloads from the Web
- **RMON, XRMON, and sFlow**
provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Troubleshooting**
ingress and egress port monitoring enable network problem solving
- **Uni-Directional Link Detection (UDLD)**
monitors a link between two switches and blocks the ports on both ends of the link if the link goes down at any point between the two devices.

Layer 2 switching

- **VLAN support and tagging**
supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- **GARP VLAN Registration Protocol**
allows automatic learning and dynamic assignment of VLANs
- **Jumbo packet support**
improves the performance of large data transfers⁷supports frame size of up to 9220 bytes
- **IEEE 802.1v protocol VLANs**
isolate select non-IPv4 protocols automatically into their own VLANs
- **Rapid Per-VLAN Spanning Tree (RPVST+)**
allows each VLAN to build a separate spanning tree to improve link bandwidth usage⁷is compatible with PVST+

Layer 3 routing

- **Static IP routing**
provides manually configured routing⁷includes ECMP capability
- **Routing Information Protocol (RIP)**
provides RIPv1 and RIPv2 routing
- **256 static and 2,048 RIP routes**
facilitate segregation of user data without adding external hardware

Security

- **Multiple user authentication methods**
 - **IEEE 802.1X**
uses an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server to authenticate in accordance with industry standards
 - **Web-based authentication**
provides a browser-based environment, similar to IEEE 802.1X, to authenticate clients that do not support the IEEE

Overview

- 802.1X supplicant
 - **MAC-based authentication**
authenticates the client with the RADIUS server based on the client's MAC address
- **Authentication flexibility**
 - **Multiple IEEE 802.1X users per port**
provides authentication of multiple IEEE 802.1X users per port; prevents a user from piggybacking on another user's IEEE 802.1X authentication
 - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**
switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Access control lists (ACLs)**
provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **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
- **IEEE 802.1X, MAC or Web authentication**
provides concurrent network access control and Web authentication of up to 24 clients per port
- **Secure shell**
encrypts all transmitted data for secure remote CLI access over IP networks
- **Secure Sockets Layer (SSL)**
encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Port security**
allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**
prevents particular configured MAC addresses from connecting to the network
- **Secure FTP**
allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Switch management logon security**
helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication
- **Custom banner**
displays security policy when users log in to the switch
- **STP BPDU port protection**
blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **DHCP protection**
blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **STP Root Guard**
protects the root bridge from malicious attacks or configuration mistakes
- **Identity-driven ACL**
enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **Per-port broadcast throttling**
selectively configures broadcast control on heavy traffic port uplinks

Monitor and diagnostics

- **Digital optical monitoring of SFP+ and 1000BASE-T transceivers**
allows detailed monitoring of the transceiver settings and parameters

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)‡**



Overview

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 zI Modules, HP Threat Management Services zI Module, HP AllianceOne Extended zI Module with Riverbed Steelhead, HP MSM765zI Mobility Controller and HP Survivable Branch Communication zI 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 Order²

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

HP 2920-24G Switch	J9726A
<ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X331 165W 100-240VAC to 12VDC PS included • 1U - Height 	
PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP	J9726A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9726A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9726A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP 2920-24G-POE+ Switch	J9727A
<ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 575W 100-240VAC to 54VDC PS included • 1U - Height 	See Configuration Note ^{1, 2}
PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP	J9727A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9727A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9727A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP 2920-48G Switch	J9728A
<ul style="list-style-type: none"> • 48 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X331 165W 100-240VAC to 12VDC PS included • 1U - Height 	See Configuration Note ^{1, 2}
PDU CABLE NA/MEX/TW/JPPDU CABLE NA/MEX/TW/JP	J9728A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9728A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9728A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration

HP 2920-48G-POE+ Switch	J9729A
<ul style="list-style-type: none"> • 48 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 575W 100-240VAC to 54VDC PS included • 1U - Height 	See Configuration Note ^{1, 2}
PDU CABLE NA/MEX/TW/JP	J9729A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9729A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9729A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP 2920-48G-POE+ 740W Switch	J9836A
<ul style="list-style-type: none"> • 44 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 RJ-45 dual-personality 10/100/1000 PoE+ ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 1050W 110-240VAC to 54VDC PS included • 1U - Height 	See Configuration Note ^{1, 2}
PDU CABLE NA/MEX/TW/JP	J9836A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9836A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9836A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules

Note 1	The following Transceivers install into this Module Switch ²	
	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
	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	

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

Rack Level Integration CTO Models

HP 2920-24G Switch	J9726A#0D1
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Configuration

<ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports\ • min=0 \ max=4 SFP Transceivers • 1 - HP X331 165W 100-240VAC to 12VDC PS included • 1U - Height 	<p>See Configuration Note=1, 3, 4, 5</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9726A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9726A#B2C</p>
<p>HP 2920-24G-POE+ Switch</p> <ul style="list-style-type: none"> • 24 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 575W 100-240VAC to 54VDC PS included • 1U - Height 	<p>J9727A#0D1 See Configuration Note=1, 3, 4, 5</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9727A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9727A#B2C</p>
<p>HP 2920-48G Switch</p> <ul style="list-style-type: none"> • 48 RJ-45 autosensing 10/100/1000 ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X331 165W 100-240VAC to 12VDC PS included • 1U - Height 	<p>J9728A#0D1 See Configuration Note=1, 3, 4, 5</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9728A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9728A#B2C</p>
<p>HP 2920-48G-POE+ Switch</p> <ul style="list-style-type: none"> • 48 RJ-45 autosensing 10/100/1000 PoE+ ports • 4 dual-personality ports • min=0 \ max=4 SFP Transceivers • 1 - HP X332 575W 100-240VAC to 54VDC PS included • 1U - Height 	<p>J9729A#0D1 See Configuration Note=1, 3, 4, 5</p>
<p>PDU CABLE NA/MEX/TW/JP</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	<p>J9729A#B2B</p>
<p>PDU CABLE ROW</p> <ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	<p>J9729A#B2C</p>
<p>HP 2920-48G-POE+ 740W Switch</p>	<p>J9836A</p>

Configuration

- 44 RJ-45 autosensing 10/100/1000 PoE+ ports
- 4 RJ-45 dual-personality 10/100/1000 PoE+ ports
- min=0 \ max=4 SFP Transceivers
- 1 - HP X332 1050W 110-240VAC to 54VDC PS included
- 1U - Height

See
Configuration
Note=1, 3, 4, 5

PDU CABLE NA/MEX/TW/JP

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

J9836A#B2B

PDU CABLE ROW

- C15 PDU Jumper Cord (ROW)

J9836A#B2C

Configuration Rules

Note 1

The following Transceivers install into this Module (Use #0D1 quoted to switch if switch is CTO) - if applicable=

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
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

Note 3

If this switch is factory installed in HP Racks, then the J9583A#0D1 is required.
CLIC Only - Allow the J9583AZ in all regions

Note 4

Localization required on orders without #B2B or #B2C options

Note 5

If HP CTO Switch Chassis is selected for Rack Level Integration, Then the CTO Switch Chassis needs to integrate (with #0D1) to the HP Rack.

Remarks

Drop down under power supply should offer the following options and results=

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

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

Internal Power Supplies

System (std 1 // max 1) per switch enclosure

HP X331 165W 100-240VAC to 12VDC PS

- includes 1 x c15, 165w (Spare Only)

J9739A#0D1

See
Configuration
Note=1, 3, 4

PDU CABLE NA/MEX/TW/JP

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

J9739A#B2B

PDU CABLE ROW

J9739A#B2C



Configuration

<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9739A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP X332 575W 100-240VAC to 54VDC PS	J9738A#0D1
<ul style="list-style-type: none"> • includes 1 x c15, 575w (Spare Only) 	See Configuration Note 2, 3, 4
PDU CABLE NA/MEX/TW/JP	J9738A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9738A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9738A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HP X332 1050W 100-240VAC to 54VDC PS	J9737A
<ul style="list-style-type: none"> • includes 1 x c15, 1050w (Spare or Upgrade Only) 	See Configuration Note 2, 3, 4
PDU CABLE NA/MEX/TW/JP	J9737A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	J9737A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	J9737A#B2E
<ul style="list-style-type: none"> • NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules

Note 1	This power supply is only supported on the J9726A and J9728A.
Note 2	This power supply is only supported on the J9727A ,J9729A and J9836A.
Note 3	Localization required on orders without #B2B ,#B2C or #B2E options.
Note 4	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)

Remarks	Drop down under power supply should offer the following options and results ⁻ Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO) Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO) High Volt Switch/Router/Power Supply to Wall Power Cord - #B2E Option. (Offered only in North America, Mexico, Taiwan, and Japan)
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Configuration

Localization		
	X332 575W 100-240VAC to 54VDC PS, CL - Chile - English localization Power Cord=Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6980	J9738A#A1X
	X332 575W 100-240VAC to 54VDC PS, US - U.S. - English localization Power Cord=Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0973	J9738A#ABA
	X332 575 W 100-240VAC to 54VDC PS, EU - Europe - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9738A#ABB
	X332 575W 100-240VAC to 54VDC PS, AU - Australia - English localization Power Cord=Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0834	J9738A#ABG
	X332 575W 100-240VAC to 54VDC PS, BR - Brazil - Portuguese localization Power Cord=Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1069	J9738A#AC4
	X332 575W 100-240VAC to 54VDC PS, KR - Korea - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9738A#AC6
	X332 575W 100-240VAC to 54VDC PS, UK - United Kingdom - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9738A#ACC
	X332 575W 100-240VAC to 54VDC PS, SZ - Switzerland - English localization Power Cord=Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6815	J9738A#ACD
	X332 575W 100-240VAC to 54VDC PS, DK - Denmark - English localization Power Cord=Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6814	J9738A#ACE
	X332 575W 100-240VAC to 54VDC PS, JP - Japan - English localization Power Cord=Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #-8120-4753	J9738A#ACF
	X332 575W 100-240VAC to 54VDC PS, IN - India - English localization Power Cord=Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0780	J9738A#ACJ
	X332 575W 100-240VAC to 54VDC PS, ZA - South Africa - English localization Power Cord=Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6813	J9738A#ACQ
	X332 575W 100-240VAC to 54VDC PS, IL - Israel - English localization Power Cord=Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1035	J9738A#AKJ
	X332 575W 100-240VAC to 54VDC PS, TH - Thailand - English localization	J9738A#AKL
	X332 575W 100-240VAC to 54VDC PS, CN - China - English localization Power Cord=Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-8707	J9738A#AKM
	X332 575W 100-240VAC to 54VDC PS, TW - Taiwan - English localization Power Cord=Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0974	J9738A#ARB
	X332 575W 100-240VAC to 54VDC PS, MY - Malaysia - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9738A#ARE
	X332 575W 100-240VAC to 54VDC PS, AR - Argentina - English localization Power Cord=Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6869	J9738A#ARM
	X331 165W 100-240VAC to 12VDC PS, CL - Chile - English localization	J9739A#A1X

Configuration

Power Cord=Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8120-6980	
X331 165W 100-240VAC to 12VDC PS, US - U.S. - English localization	J9739A#ABA
Power Cord=Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #=8121-0973	
X331 165W 100-240VAC to 12VDC PS, EU - Europe - English localization	J9739A#ABB
Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #=8120-6811	
X331 165W 100-240VAC to 12VDC PS, AU - Australia - English localization	J9739A#ABG
Power Cord=Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8121-0834	
X331 165W 100-240VAC to 12VDC PS, BR - Brazil - Portuguese localization	J9739A#AC4
Power Cord=Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #=8121-1069	
X331 165W 100-240VAC to 12VDC PS, KR - Korea - English localization	J9739A#AC6
Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #=8120-6811	
X331 165W 100-240VAC to 12VDC PS, UK - United Kingdom - English localization	J9739A#ACC
Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8120-6809	
X331 165W 100-240VAC to 12VDC PS, SZ - Switzerland - English localization	J9739A#ACD
Power Cord=Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #=8120-6815	
X331 165W 100-240VAC to 12VDC PS, DK - Denmark - English localization	J9739A#ACE
Power Cord=Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #=8120-6814	
X331 165W 100-240VAC to 12VDC PS, JP - Japan - English localization	J9739A#ACF
Power Cord=Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #=8120-4753	
X331 165W 100-240VAC to 12VDC PS, IN - India - English localization	J9739A#ACJ
Power Cord=Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8121-0780	
X331 165W 100-240VAC to 12VDC PS, ZA - South Africa - English localization	J9739A#ACQ
Power Cord=Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #=8120-6813	
X331 165W 100-240VAC to 12VDC PS, IL - Israel - English localization	J9739A#AKJ
Power Cord=Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #=8121-1035	
X331 165W 100-240VAC to 12VDC PS, TH - Thailand - English localization	J9739A#AKL
Power Cord=Quantity 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8121-0668	
X331 165W 100-240VAC to 12VDC PS, CN - China - English localization	J9739A#AKM
Power Cord=Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8120-8707	
X331 165W 100-240VAC to 12VDC PS, TW - Taiwan - English localization	J9739A#ARB
Power Cord=Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #=8121-0974	
X331 165W 100-240VAC to 12VDC PS, MY - Malaysia - English localization	J9739A#ARE
Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8120-6809	
X331 165W 100-240VAC to 12VDC PS, AR - Argentina - English localization	J9739A#ARM
Power Cord=Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #=8120-6869	

Configuration

2920-24G Switch, CL - Chile - English localization Power Cord=Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6980	J9726A#A1X
2920-24G Switch, US - U.S. - English localization Power Cord=Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0914	J9726A#ABA
2920-24G Switch, EU - Europe - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9726A#ABB
2920-24G Switch, AU - Australia - English localization Power Cord=Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0834	J9726A#ABG
2920-24G Switch, BR - Brazil - Portuguese localization Power Cord=Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1069	J9726A#AC4
2920-24G Switch, KR - Korea - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9726A#AC6
2920-24G Switch, UK - United Kingdom - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9726A#ACC
2920-24G Switch, SZ - Switzerland - English localization Power Cord=Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6815	J9726A#ACD
2920-24G Switch, DK - Denmark - English localization Power Cord=Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6814	J9726A#ACE
2920-24G Switch, JP - Japan - English localization Power Cord=Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #-8120-4753	J9726A#ACF
2920-24G Switch, IN - India - English localization Power Cord=Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0780	J9726A#ACJ
2920-24G Switch, ZA - South Africa - English localization Power Cord=Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6813	J9726A#ACQ
2920-24G Switch, IL - Israel - English localization Power Cord=Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1035	J9726A#AKJ
2920-24G Switch, TH - Thailand - English localization Power Cord=Quantity 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0668	J9726A#AKL
2920-24G Switch, CN - China - English localization Power Cord=Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-8707	J9726A#AKM
2920-24G Switch, TW - Taiwan - English localization Power Cord=Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0974	J9726A#ARB
2920-24G Switch, MY - Malaysia - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9726A#ARE
2920-24G Switch, AR - Argentina - English localization	J9726A#ARM

Configuration

Power Cord—Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6869	
2920-24G Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9726A#B2B
Power Cord—Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1091	
2920-24G Switch, JmpCbl-ROW - JmpCbl-ROW	J9726A#B2C
Power Cord—Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1094	
2920-24G Switch, 220V-NA - L6-20 220V-NA	J9726A#B2E
Power Cord—Quantity 1, NEMA 6-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-3996	
2920-24G-POE+ Switch, CL - Chile - English localization	J9727A#A1X
Power Cord—Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6980	
2920-24G-POE+ Switch, US - U.S. - English localization	J9727A#ABA
Power Cord—Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #—8121-0914	
2920-24G-POE+ Switch, EU - Europe - English localization	J9727A#ABB
Power Cord—Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6811	
2920-24G-POE+ Switch, AU - Australia - English localization	J9727A#ABG
Power Cord—Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8121-0834	
2920-24G-POE+ Switch, BR - Brazil - Portuguese localization	J9727A#AC4
Power Cord—Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1069	
2920-24G-POE+ Switch, KR - Korea - English localization	J9727A#AC6
Power Cord—Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6811	
2920-24G-POE+ Switch, UK - United Kingdom - English localization	J9727A#ACC
Power Cord—Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6809	
2920-24G-POE+ Switch, SZ - Switzerland - English localization	J9727A#ACD
Power Cord—Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6815	
2920-24G-POE+ Switch, DK - Denmark - English localization	J9727A#ACE
Power Cord—Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6814	
2920-24G-POE+ Switch, JP - Japan - English localization	J9727A#ACF
Power Cord—Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #—8120-4753	
2920-24G-POE+ Switch, IN - India - English localization	J9727A#ACJ
Power Cord—Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8121-0780	
Power Cord—Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6813	J9727A#ACQ
2920-24G-POE+ Switch, IL - Israel - English localization	J9727A#AKJ
Power Cord—Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1035	
2920-24G-POE+ Switch, TH - Thailand - English localization	J9727A#AKL
Power Cord—Quantity 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8121-0668	
2920-24G-POE+ Switch, CN - China - English localization	J9727A#AKM

Configuration

Power Cord—Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-8707	
2920-24G-POE+ Switch, TW - Taiwan - English localization	J9727A#ARB
Power Cord—Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #—8121-0974	
2920-24G-POE+ Switch, MY - Malaysia - English localization	J9727A#ARE
Power Cord—Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6809	
2920-24G-POE+ Switch, AR - Argentina - English localization	J9727A#ARM
Power Cord—Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6869	
2920-24G-POE+ Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9727A#B2B
Power Cord—Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1091	
2920-24G-POE+ Switch, JmpCbl-ROW - JmpCbl-ROW	J9727A#B2C
Power Cord—Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1094	
2920-24G-POE+ Switch, 220V-NA - L6-20 220V-NA	J9727A#B2E
Power Cord—Quantity 1, NEMA 6-15P, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #—8120-5338	
2920-48G Switch, CL - Chile - English localization	J9728A#A1X
Power Cord—Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6980	
2920-48G Switch, US - U.S. - English localization	J9728A#ABA
Power Cord—Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #—8121-0914	
2920-48G Switch, EU - Europe - English localization	J9728A#ABB
Power Cord—Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6811	
2920-48G Switch, AU - Australia - English localization	J9728A#ABG
Power Cord—Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8121-0834	
2920-48G Switch, BR - Brazil - Portuguese localization	J9728A#AC4
Power Cord—Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #—8121-1069	
2920-48G Switch, KR - Korea - English localization	J9728A#AC6
Power Cord—Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6811	
2920-48G Switch, UK - United Kingdom - English localization	J9728A#ACC
Power Cord—Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8120-6809	
2920-48G Switch, SZ - Switzerland - English localization	J9728A#ACD
Power Cord—Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6815	
2920-48G Switch, DK - Denmark - English localization	J9728A#ACE
Power Cord—Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #—8120-6814	
2920-48G Switch, JP - Japan - English localization	J9728A#ACF
Power Cord—Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #—8120-4753	
2920-48G Switch, IN - India - English localization	J9728A#ACJ
Power Cord—Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #—8121-0780	

Configuration

2920-48G Switch, ZA - South Africa - English localization Power Cord=Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6813	J9728A#ACQ
2920-48G Switch, IL - Israel - English localization Power Cord=Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1035	J9728A#AKJ
2920-48G Switch, TH - Thailand - English localization Power Cord=Quantity 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0668	J9728A#AKL
2920-48G Switch, CN - China - English localization Power Cord=Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-8707	J9728A#AKM
2920-48G Switch, TW - Taiwan - English localization Power Cord=Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0974	J9728A#ARB
2920-48G Switch, MY - Malaysia - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9728A#ARE
2920-48G Switch, AR - Argentina - English localization Power Cord=Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6869	J9728A#ARM
2920-48G Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW Power Cord=Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1091	J9728A#B2B
2920-48G Switch, JmpCbl-ROW - JmpCbl-ROW Power Cord=Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1094	J9728A#B2C
2920-48G Switch, 220V-NA - L6-20 220V-NA Power Cord=Quantity 1, NEMA 6-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-3996	J9728A#B2E
2920-48G-POE+ Switch, CL - Chile - English localization Power Cord=Quantity 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6980	J9729A#A1X
2920-48G-POE+ Switch, US - U.S. - English localization Power Cord=Quantity 1, NEMA 5-15P, C15 STRAIGHT, 125 V, 15 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0914	J9729A#ABA
2920-48G-POE+ Switch, EU - Europe - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9729A#ABB
2920-48G-POE+ Switch, AU - Australia - English localization Power Cord=Quantity 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0834	J9729A#ABG
2920-48G-POE+ Switch, BR - Brazil - Portuguese localization Power Cord=Quantity 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1069	J9729A#AC4
2920-48G-POE+ Switch, KR - Korea - English localization Power Cord=Quantity 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6811	J9729A#AC6
2920-48G-POE+ Switch, UK - United Kingdom - English localization Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9729A#ACC
2920-48G-POE+ Switch, SZ - Switzerland - English localization	J9729A#ACD

Configuration

Power Cord=Quantity 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6815	
2920-48G-POE+ Switch, DK - Denmark - English localization	J9729A#ACE
Power Cord=Quantity 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6814	
2920-48G-POE+ Switch, JP - Japan - English localization	J9729A#ACF
Power Cord=Quantity 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet ,Part Store #-8120-4753	
2920-48G-POE+ Switch, IN - India - English localization	J9729A#ACJ
Power Cord=Quantity 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0780	
2920-48G-POE+ Switch, ZA - South Africa - English localization	J9729A#ACQ
Power Cord=Quantity 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 2.25 meters, 7.39 feet ,Part Store #-8120-6813	
2920-48G-POE+ Switch, IL - Israel - English localization	J9729A#AKJ
Power Cord=Quantity 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1035	
2920-48G-POE+ Switch, TH - Thailand - English localization	J9729A#AKL
Power Cord=Quantity 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8121-0668	
2920-48G-POE+ Switch, CN - China - English localization	J9729A#AKM
Power Cord=Quantity 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-8707	
2920-48G-POE+ Switch, TW - Taiwan - English localization	J9729A#ARB
Power Cord=Quantity 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 2.5 meters, 8.21 feet ,Part Store #-8121-0974	
Power Cord=Quantity 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6809	J9729A#ARE
2920-48G-POE+ Switch, AR - Argentina - English localization	J9729A#ARM
Power Cord=Quantity 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 2.3 meters, 7.55 feet ,Part Store #-8120-6869	
2920-48G-POE+ Switch, JmpCbl-NA/JP/TW - JmpCbl-NA/JP/TW	J9729A#B2B
Power Cord=Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1091	
2920-48G-POE+ Switch, JmpCbl-ROW - JmpCbl-ROW	J9729A#B2C
Power Cord=Quantity 1, C14 STRAIGHT, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8121-1094	
2920-48G-POE+ Switch, 220V-NA - L6-20 220V-NA	J9729A#B2E
Power Cord=Quantity 1, NEMA 6-15P, C15 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet ,Part Store #-8120-5338	

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

Networking

Ethernet Modules

System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure

HP 2920 2-port 10GbE SFP+ Module	J9731A
<ul style="list-style-type: none"> min=0 \ max=2 SFP + Transceivers 	See Configuration Note1



Configuration

HP 2920 2-port 10GBASE-T Module

J9732A

Configuration Rules

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

Stacking Modules

System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure

HP 2920 2-port Stacking Module

J9733A

Transceivers

SFP Transceivers

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
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

SFP+ Transceivers

HP X132 10G SFP+ LC ER Transceiver	J9153A
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 X242 10G SFP+ SFP+ 1m DAC Cable	J9281B
HP X242 10G SFP+ SFP+ 3m DAC Cable	J9283B



Configuration

HP X242 10G SFP+ SFP+ 7m DAC Cable	J9285B
HP X244 10G XFP SFP+ 1m DAC Cable	J9300A
HP X244 10G XFP SFP+ 3m DAC Cable	J9301A
HP X244 10G XFP SFP+ 5m DAC Cable	J9302A
HP X242 10G SFP+ 10m DAC Cable	J9286B
HP X242 10G SFP+ 15m DAC Cable	J9287B

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

Stacking Cables

HP 2920 0.5m Stacking Cable	J9734A
HP 2920 1.0m Stacking Cable	J9735A
HP 2920 3.0m Stacking Cable	J9736A

Switch Enclosure Options

Mounting Kit

HP X410 1U Univ 4-post Rack Mnt Kit	J9583A
	See Configuration Note-1

Configuration Rules

Note 1 [If this Mounting Kit is order with #OD1 then it integrates to the HP Universal Rack. \(not the switch\)](#)

External/Redundant Power Supplies

HP 640 External/Redundant Power Supply	J9805A
<ul style="list-style-type: none"> • Height = 1U • includes 1 x c13, 800w 	See Configuration Note-1, 3, 4, 5
HP X331 165W 100-240VAC to 12VDC PS	J9739A

Configuration

<ul style="list-style-type: none"> includes 1 x c15, 165w 	See Configuration Note-2
PDU CABLE NA/MEX/TW/JP <ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	J9739A#B2B
PDU CABLE ROW <ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	J9739A#B2C
High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	J9739A#B2E
HP X332 575W 100-240VAC to 54VDC PS <ul style="list-style-type: none"> includes 1 x c15, 575w 	J9738A See Configuration Note-2
PDU CABLE NA/MEX/TW/JP <ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	J9738A#B2B
PDU CABLE ROW <ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	J9738A#B2C
High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	J9738A#B2E
HP X332 1050W 100-240VAC to 54VDC PS <ul style="list-style-type: none"> includes 1 x c15, 1050w 	J9737A See Configuration Note-2
PDU CABLE NA/MEX/TW/JP <ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	J9737A#B2B
PDU CABLE ROW <ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	J9737A#B2C
High Volt Switch to Wall Power Cord <ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	J9737A#B2E

Configuration Rules

- Note 1** Can take up to Three internal power supplies. (J9737A, J9738A and J9739A) System (std 0 // max 3) User Selection (min 1 // max 3) per Power Supply enclosure. Mixing or matching of the 3 different power supplies is supported in the Chassis.
- Note 2** Localization required on orders without #B2B, #B2C or #B2E options.
- Note 3** No Localization. Localization is on the internal Power supplies.

Configuration

- Note 4** Up to eight (8) Switch Chassis can be connected to this External Redundant Power Source.
Power supply slot 1 supports up to 4 cables
Power supply slot 2 supports up to 2 cables
Power supply slot 3 supports up to 2 cables
Supported on J9726A, J9727A, J9728A, J9729A and J9836A switches only.
- Note 5** If this RPS/EPS is installed in HP Universal Racks, Then the J9583A#0D1 is required
- Remarks-** For J9726A, and J9728A, the power supply in J9805A must be J9739A (165W).
For J9727A and J9729A, the power supply in J9805A must be J9737A (1050W) or J9738A (575W).
For J9836A, the power supply in J9805A must be J9737A (1050W).
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)

External/Redundant Power Cables

HP 640 EPS/RPS 1m Cable

J9806A
See Configuration
Note-1

Configuration Rules

- Note 1** 1, 2, 3 or 4 cables per AC Power Supply used with J9805A supported. System (std 0 // max 8)
User Selection (min 1 // max 8) per Power Supply enclosure.
Power supply slot 1 supports up to 4 cables
Power supply slot 2 supports up to 2 cables
Power supply slot 3 supports up to 2 cables

Technical Specifications

HP 2920-24G Switch (J9726A)

I/O ports and slots	20 RJ-45 autosensing 10/100/1000 ports [†] Duplex ⁻ 10BASE-T/100BASE-TX ⁻ half or full [†] 1000BASE-T ⁻ full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port 2 module slots 1 stacking module slot	
Power supplies	1 power supply slot 1 minimum power supply required includes ⁻ 1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)
	Weight	11.57 lb (5.25 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash MB [†] packet buffer size ⁻ 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)	
Performance	100 Mb Latency	< 9.0 μ s (FIFO 64-byte packets)
	1000 Mb Latency	< 3.3 μ s (FIFO 64-byte packets)
	10 Gbps Latency	< 3.3 μ s (FIFO 64-byte packets)
	Throughput	95.2 million pps
	Switching capacity	128 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power ⁻ 57 dB, Pressure ⁻ 41.4 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	198 BTU/hr (208.89 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	58 W
	Idle power	26 W
Safety	CE Labeled [†] EN 60825-1 Safety of Laser Products-Part 1 [†] FCC Part 15, Subpart B [†] GOST [†] EU RoHS Compliant [†] EN 55022 Class A [†] EN 55024 ⁻ 1998 [†] C-Tick [†] ICES-003, Class A [†] VCCI Class A [†] IEC 60950-1 [†] Second Edition [†] IEC 60825-1 [†] EN62479 ⁻ 2010 [†] CSA C22.2 No. 60950-1-07 2nd Edition [†] EN 60950-1 [†] 2006+A11 [†] 2009+A1 [†] 2010+A12 [†] 2011 [†] IEC 60950-1 (ed.2) ⁻ am1	
Emissions	FCC part 15 Class A [†] VCCI Class A [†] EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4



Technical Specifications

	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+™IMC - Intelligent Management Center™command-line interface™Web browser™configuration menu™out-of-band management (RJ-45 Ethernet)™SNMP Manager™Telnet™RMON1™FTP™in-line and out-of-band™out-of-band management (serial RS-232C or Micro USB)	
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 2920-24G-PoE+ Switch (J9727A)

I/O ports and slots	20 RJ-45 autosensing 10/100/1000 PoE+ ports™Duplex™10BASE-T/100BASE-TX™half or full™1000BASE-T™full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)	
	4 RJ-45 dual-personality 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+)	
	1 dual-personality (RJ-45 or USB micro-B)	
	1 USB 1.1	
	1 RJ-45 out-of-band management port	
	2 module slots	
	1 stacking module slot	
Power supplies	1 power supply slot	
	1 minimum power supply required	
	includes™1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)
	Weight	12.04 lb (5.46 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash™packet buffer size™11.25 MB (6.5 MB dynamic egress + 4.5 MB ingress)	
Performance	100 Mb Latency	< 9.0 µs (FIFO 64-byte packets)
	1000 Mb Latency	< 3.3 µs (FIFO 64-byte packets)
	10 Gbps Latency	< 3.3 µs (FIFO 64-byte packets)
	Throughput	95.2 million pps
	Switching capacity	128 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)

Technical Specifications

	Acoustic	Power=61 dB, Pressure=44.9 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	358 BTU/hr (377.69 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	475 W
	Idle power	42 W
	PoE power	370 W
Safety	CE Labeled=EN 60825-1 Safety of Laser Products-Part 1=FCC Part 15, Subpart B=GOST=EU RoHS Compliant=EN 55022 Class A=EN 55024=1998=C-Tick=ICES-003, Class A=VCCI Class A=IEC 60950-1 =Second Edition =IEC 60825-1=EN62479=2010=CSA C22.2 No. 60950-1-07 2nd Edition=EN 60950-1=2006+A11=2009+A12=2010+A12=2011=IEC 60950-1 (ed.2)=am1	
Emissions	FCC part 15 Class A=VCCI Class A=EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+=IMC - Intelligent Management Center=command-line interface=Web browser=configuration menu=out-of-band management (RJ-45 Ethernet)=SNMP Manager=Telnet=RMON1=FTP=in-line and out-of-band=out-of-band management (serial RS-232C or Micro USB)	
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 2920-48G Switch (J9728A)

I/O ports and slots	44 RJ-45 autosensing 10/100/1000 ports=Duplex=10BASE-T/100BASE-TX=half or full=1000BASE-T=full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 4 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T) 1 dual-personality (RJ-45 or USB micro-B) 1 USB 1.1 1 RJ-45 out-of-band management port 2 module slots 1 stacking module slot	
Power supplies	1 power supply slot 1 minimum power supply required includes=1 x J9739A (HP X331 165W 100-240VAC to 12VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.75(h) in (44.25 x 33.6 x 4.45 cm) (1U height)
	Weight	11.95 lb (5.42 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash=packet buffer size=11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)	



Technical Specifications

Performance	100 Mb Latency	< 9.0 μ s (FIFO 64-byte packets)
	1000 Mb Latency	< 3.3 μ s (FIFO 64-byte packets)
	10 Gbps Latency	< 3.2 μ s (FIFO 64-byte packets)
	Throughput	130.9 million pps
	Switching capacity	176 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power=57 dB, Pressure=41.8 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	239 BTU/hr (252.15 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	70 W
	Idle power	27 W
Safety	CE Labeled=EN 60825-1 Safety of Laser Products-Part 1=FCC Part 15, Subpart B=GOST=EU RoHS Compliant=EN 55022 Class A=EN 55024=1998=C-Tick=ICES-003, Class A=VCCI Class A=IEC 60825-1=IEC 60950-1, Second Edition=EN62479=2010=CSA C22.2 No. 60950-1-07 2nd Edition=EN 60950-1=2006+A11=2009+A12=2010+A12=2011=IEC 60950-1 (ed.2)=am1	
Emissions	FCC part 15 Class A=VCCI Class A=EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
	Harmonics	IEC 61000-3-2
Flicker	IEC 61000-3-3	
Management	HP PCM+=IMC - Intelligent Management Center=command-line interface=Web browser=configuration menu=out-of-band management (RJ-45 Ethernet)=SNMP Manager=Telnet=RMON1=FTP=in-line and out-of-band=out-of-band management (serial RS-232C or Micro USB)	
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 2920-48G-PoE+ Switch (J9729A)



Technical Specifications

I/O ports and slots	44 RJ-45 autosensing 10/100/1000 PoE+ ports [†] Duplex [†] 10BASE-T/100BASE-TX [†] half or full [†] 1000BASE-T [†] full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)	
	4 RJ-45 dual-personality 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+)	
	1 dual-personality (RJ-45 or USB micro-B)	
	1 USB 1.1	
	1 RJ-45 out-of-band management port	
	2 module slots	
	1 stacking module slot	
Power supplies	1 power supply slot	
	1 minimum power supply required	
	includes [†] 1 x J9738A (HP X332 575W 100-240VAC to 54VDC Modular Power Supply)	
Physical characteristics	Dimensions	17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.39 cm) (1U height)
	Weight	12.57 lb (5.7 kg)
Memory and processor	Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash [†] packet buffer size [†] 11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)	
Performance	100 Mb Latency	< 9.0 μs (FIFO 64-byte packets)
	1000 Mb Latency	< 3.2 μs (FIFO 64-byte packets)
	10 Gbps Latency	< 3.2 μs (FIFO 64-byte packets)
	Throughput	130.9 million pps
	Switching capacity	176 Gb/s
	Routing table size	2048 entries (IPv4), 256 entries (IPv6)
	MAC address table size	16000 entries
Environment	Operating temperature	32°F to 131°F (0°C to 55°C)
	Operating relative humidity	15% to 95%, noncondensing
	Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Non-operating/Storage relative humidity	15% to 95%, noncondensing
	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power [†] 62 dB, Pressure [†] 45.2 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	399 BTU/hr (420.95 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	487 W
	Idle power	46 W
	PoE power	370 W
Safety	CE Labeled [†] EN 60825-1 Safety of Laser Products-Part 1 [†] FCC Part 15, Subpart B [†] GOST [†] EU RoHS Compliant [†] EN 55022 Class A [†] EN 55024 [†] 1998 [†] C-Tick [†] ICES-003, Class A [†] VCCI Class A [†] IEC 60825-1 [†] IEC 60950-1, Second Edition [†] EN62479 [†] 2010 [†] CSA C22.2 No. 60950-1-07 2nd Edition [†] EN 60950-1 [†] 2006+A11 [†] 2009+A1 [†] 2010+A12 [†] 2011 [†] IEC 60950-1 (ed.2) [†] -am1	
Emissions	FCC part 15 Class A [†] VCCI Class A [†] EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3

Technical Specifications

EFT/Burst	IEC 61000-4-4
Surge	IEC 61000-4-5
Conducted	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11
Harmonics	IEC 61000-3-2
Flicker	IEC 61000-3-3

Management

HP PCM+™IMC - Intelligent Management Center™command-line interface™Web browser™configuration menu™out-of-band management (RJ-45 Ethernet)™SNMP Manager™Telnet™RMON1™FTP™in-line and out-of-band™out-of-band management (serial RS-232C or Micro USB)

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 2920-48G-PoE+ 740W Switch (J9836A)

I/O ports and slots

44 RJ-45 autosensing 10/100/1000 PoE+ ports™Duplex™10BASE-T/100BASE-TX™half or full™1000BASE-T™full only (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T, IEEE 802.3at PoE+)
 4 RJ-45 dual-personality 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+)
 1 dual-personality (RJ-45 or USB micro-B)
 1 USB 1.1
 1 RJ-45 out-of-band management port
 2 module slots
 1 stacking module slot

Power supplies

1 power supply slot
 1 minimum power supply required
 includes™1 x J9737A (HP X332 1050W 110-240VAC to 54VDC Power Supply)

Physical characteristics

Dimensions 17.42(w) x 13.23(d) x 1.73(h) in (44.25 x 33.6 x 4.39 cm) (1U height)
Weight 12.86 lb (5.83 kg)

Memory and processor

Tri Core ARM1176 @ 625 MHz, 512 MB SDRAM, 1 GB flash™packet buffer size™11.25 MB (6.75 MB dynamic egress + 4.5 MB ingress)

Performance

100 Mb Latency < 9.0 μs (FIFO 64-byte packets)
1000 Mb Latency < 3.2 μs (FIFO 64-byte packets)
10 Gbps Latency < 3.2 μs (FIFO 64-byte packets)
Throughput 130.9 million pps
Switching capacity 176 Gb/s
Routing table size 2048 entries (IPv4), 256 entries (IPv6)
MAC address table size 16000 entries

Environment

Operating temperature 32°F to 131°F (0°C to 55°C)
Operating relative humidity 15% to 95%, noncondensing
Non-operating/Storage temperature -40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity 15% to 95%, noncondensing

Technical Specifications

	Altitude	up to 10,000 ft (3 km)
	Acoustic	Power—53 dB, Pressure—38.3 dB
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	399 BTU/hr (420.95 kJ/hr)
	AC voltage	100-240 VAC
	Maximum power rating	487 W
	Idle power	46 W
	PoE power	740 W
	Safety	CE Labeled—EN 60825-1 Safety of Laser Products-Part 1—FCC Part 15, Subpart B—GOST—EU RoHS Compliant—EN 55022 Class A—EN 55024—1998—C-Tick—ICES-003, Class A—VCCI Class A—IEC 60950-1 Second Edition —IEC 60825-1—EN62479—2010—CSA C22.2 No. 60950-1-07 2nd Edition—EN 60950-1—2006+A11—2009+A1—2010+A12—2011—IEC 60950-1 (ed.2)—am1
Emissions	FCC part 15 Class A—VCCI Class A—EN 55022/CISPR 22 Class A	
Immunity	EN	EN 55024, CISPR 24
	ESD	IEC 61000-4-2
	Radiated	IEC 61000-4-3
	EFT/Burst	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted	IEC 61000-4-6
	Power frequency magnetic field	IEC 61000-4-8
	Voltage dips and interruptions	IEC 61000-4-11
Management	Harmonics	IEC 61000-3-2
	Flicker	IEC 61000-3-3
Management	HP PCM+—iMC - Intelligent Management Center—command-line interface—Web browser—configuration menu—out-of-band management (RJ-45 Ethernet)—SNMP Manager—Telnet—RMON1—FTP—in-line and out-of-band—out-of-band management (serial RS-232C or Micro USB)	
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 Denial of service protection

(applies to all products in series) CPU DoS Protection

Device management

RFC 1155 Structure and Mgmt Information (SMIv1)
 RFC 1157 SNMPv1/v2c
 RFC 1591 DNS (client)
 RFC 1901 (Community based SNMPv2)
 RFC 1901-1907 SNMPv2c, SMIv2 and Revised MIB-II
 RFC 1908 (SNMP v1/2 Coexistence)
 RFC 2578-2580 SMIv2
 RFC 2579 (SMIv2 Text Conventions)
 RFC 2580 (SMIv2 Conformance)
 RFC 2819 (RMON groups Alarm, Event, History and Statistics only)
 RFC 3416 (SNMP Protocol Operations v2)
 RFC 3417 (SNMP Transport Mappings)

Technical Specifications

HTML and telnet management
HTTP, SSHv1, and Telnet
Multiple Configuration Files
Multiple Software Images
SNMP v3 and RMON RFC support
SSHv1/SSHv2 Secure Shell
TACACS/TACACS+
Web UI

General protocols

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 802.3ab 1000BASE-T
IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.3af Power over Ethernet
IEEE 802.3at PoE+
IEEE 802.3az Energy Efficient Ethernet
IEEE 802.3x Flow Control
RFC 768 UDP
RFC 783 TFTP Protocol (revision 2)
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 854 TELNET
RFC 868 Time Protocol
RFC 951 BOOTP
RFC 1058 RIPv1
RFC 1256 ICMP Router Discovery Protocol (IRDP)
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 2236 IGMP Snooping
RFC 2453 RIPv2
RFC 2865 Remote Authentication Dial In User Service (RADIUS)
RFC 2866 RADIUS Accounting
RFC 3046 DHCP Relay Agent Information Option
RFC 3411 An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks
RFC 3412 Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)
RFC 3413 Simple Network Management Protocol (SNMP) Applications
RFC 3414 User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)
RFC 3415 View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)
RFC 3416 Protocol Operations for SNMP
RFC 3417 Transport Mappings for the Simple Network Management Protocol (SNMP)
RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
RFC 3576 Ext to RADIUS (CoA only)
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
RFC 4675 RADIUS VLAN & Priority

Technical Specifications

RFC 4861 Neighbor Discovery for IP version 6 (IPv6)
RFC 4862 IPv6 Stateless Address Autoconfiguration
UDLD (Uni-directional Link Detection)

IP multicast

RFC 1112 IGMP
RFC 2236 IGMPv2
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 3376 IGMPv3 (host joins only)
RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches

IPv6

RFC 1981 IPv6 Path MTU Discovery
RFC 2460 IPv6 Specification
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
RFC 2925 Remote Operations MIB (Ping only)
RFC 3019 MLDv1 MIB
RFC 3315 DHCPv6 (client and relay)
RFC 3513 IPv6 Addressing Architecture
RFC 3596 DNS Extension for IPv6
RFC 3810 MLDv2 (host joins only)
RFC 4022 MIB for TCP
RFC 4113 MIB for UDP
RFC 4251 SSHv6 Architecture
RFC 4252 SSHv6 Authentication
RFC 4253 SSHv6 Transport Layer
RFC 4254 SSHv6 Connection
RFC 4293 MIB for IP
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

MIBs

IEEE 802.1ap (MSTP and STP MIB's only)
RFC 1156 (TCP/IP MIB)
RFC 1157 A Simple Network Management Protocol (SNMP)
RFC 1213 MIB II
RFC 1493 Bridge MIB
RFC 1724 RIPv2 MIB
RFC 2021 RMONv2 MIB
RFC 2578 Structure of Management Information Version 2 (SMIPv2)
RFC 2579 Textual Conventions for SMIPv2
RFC 2580 Conformance Statements for SMIPv2
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 2819 RMON MIB
RFC 2863 The Interfaces Group MIB
RFC 2925 Ping MIB

Technical Specifications

RFC 2933 IGMP MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3417 Simple Network Management Protocol (SNMP) over IEEE 802 Networks
RFC 3418 MIB for SNMPv3

Network management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure of Management Information
RFC 1157 SNMPv1
RFC 2021 Remote Network Monitoring Management Information Base Version 2 using SMIv2
RFC 2576 Coexistence between SNMP versions
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2
RFC 2580 Conformance Statements for SMIv2
RFC 2819 Four groups of RMON-1 (statistics), 2 (history), 3 (alarm) and 9 (events)
RFC 2819 Remote Network Monitoring Management Information Base
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations
RFC 3164 BSD syslog Protocol
RFC 3176 sFlow
RFC 3411 SNMP Management Frameworks
RFC 3412 SNMPv3 Message Processing
RFC 3414 SNMPv3 User-based Security Model (USM)
RFC 3415 SNMPv3 View-based Access Control Model VACM)
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)
SNMPv1/v2c/v3
XRMON

QoS/CoS

IEEE 802.1P (CoS)
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2598 DiffServ Expedited Forwarding (EF)
Ingress Rate Limiting

Security

IEEE 802.1X Port Based Network Access Control
IEEE 802.1X Port-Based Network Access Control (2001)
RFC 1321 The MD5 Message-Digest Algorithm
RFC 1334 PPP Authentication Protocols (PAP)
RFC 1492 An Access Control Protocol, Sometimes Called TACACS
RFC 1492 TACACS+
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2082 RIP-2 MD5 Authentication
RFC 2104 Keyed-Hashing for Message Authentication
RFC 2138 RADIUS Authentication
RFC 2139 RADIUS Accounting
RFC 2246 Transport Layer Security (TLS)
RFC 2548 Microsoft Vendor-specific RADIUS Attributes
RFC 2618 RADIUS Authentication Client MIB
RFC 2620 RADIUS Accounting Client MIB
RFC 2716 PPP EAP TLS Authentication Protocol

Technical Specifications

- RFC 2818 HTTP Over TLS
- RFC 2865 RADIUS (client only)
- RFC 2865 RADIUS Authentication
- RFC 2866 RADIUS Accounting
- RFC 2867 RADIUS Accounting Modifications for Tunnel Protocol Support
- RFC 2868 RADIUS Attributes for Tunnel Protocol Support
- RFC 2869 RADIUS Extensions
- RFC 2882 NAS Requirements-Extended RADIUS Practices
- RFC 3162 RADIUS and IPv6
- RFC 3576 Dynamic Authorization Extensions to RADIUS
- RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
- RFC 3580 IEEE 802.1X Remote Authentication Dial In
- User Service (RADIUS) Usage Guidelines
- RFC 4576 RADIUS Attributes
- Access Control Lists (ACLs)
- draft-grant-tacacs-02 (TACACS)
- Guest VLAN for 802.1x
- MAC Authentication
- MAC Lockdown
- MAC Lockout
- Port Security
- Secure Sockets Layer (SSL)
- SSHv2 Secure Shell
- Web Authentication

Accessory Product Details

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

<p>HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)</p>	<p>Cabling</p>	<p>Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m</p>
	<p>Notes</p>	<p>Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m</p> <p>Cable Specs—Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.</p> <ul style="list-style-type: none"> • Dimensions—Core diameter—50 ± 3.0µm Cladding diameter—125 ± 2.0µm Coating diameter—245 ± 10µm • Optical glass—Bandwidth—For LED sources—1500/500 MHz-km @850/1300nm. • Optical glass—Bandwidth—For Laser sources—2000/500 MHz-km @850/1300nm. VCSEL Laser sources—600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE—The cable is duplex zipcord graded index 50/125µm multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION— • Jacket Material—Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color—Aqua for OM3 multimode per TIA 598 • Boot Color—White • Insertion Loss—less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation—3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight—Air Packed Weight—1 LB Net Weight—0.454Kg
	<p>Services</p>	<p>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.</p>

Accessory Product Details

<p>HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)</p>	<p>Cabling</p>	<p>Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m</p>
		<p>Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m</p>
	<p>Notes</p>	<p>Cable Specs—Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.</p> <ul style="list-style-type: none"> • Dimensions—Core diameter—50 ± 3.0µm Cladding diameter—125 ± 2.0µm Coating diameter—245 ± 10µm • Optical Glass Bandwidth—For LED sources—1500/500 MHz-km @850/1300nm. • Optical Glass—For Laser sources—2000/500 MHz-km @850/1300nm. VCSEL Laser sources—Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE—The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION— • Jacket Material—Riser Grade - Low Smoke Zero Halogen thermoplastic. • Jacket Color—Aqua for OM3 multimode per TIA 598 • Boot Color—White • Insertion Loss—less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. • Maximum Cable attenuation—3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. • Weight—Air Packed Weight—1 LB Net Weight—0.454Kg
	<p>Services</p>	<p>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.</p>

<p>HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)</p>	<p>Cabling</p>	<p>Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m</p>
		<p>Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m</p>
	<p>Notes</p>	<p>Cable Specs—Tight buffered duplex fiber optic multimode OM3 50/125 µm fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.</p> <ul style="list-style-type: none"> • Dimensions—Core diameter—50 ± 3.0µm Cladding diameter—125 ± 2.0µm Coating diameter—245 ± 10µm • Optical Glass Bandwidth—For LED sources—1500/500 MHz-km @850/1300nm. • Optical Glass—For Laser sources—2000/500 MHz-km @850/1300nm. VCSEL Laser sources—Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. • CABLE—The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. • BULK CABLE & CABLE ASSEMBLY CONFIGURATION—

Accessory Product Details

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

Services

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

HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)

Cabling

Cable type=

50/125 µm core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m²

Maximum distance=

10Gbps Transfer Rate (Ethernet)=300m

Notes

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

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

Services

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

Accessory Product Details

HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A) **Cabling**

Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m[±]

Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m

Notes

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

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

Services

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

HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A) **Cabling**

Cable type— 50/125 µm (core/cladding) diameter, multimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m[±]

Maximum distance— 10Gbps Transfer Rate (Ethernet)—300m

Notes

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

- Dimensions—Core diameter—50 ± 3.0µm Cladding diameter—125 ± 2.0µm Coating diameter—245 ± 10µm
- Optical Glass Bandwidth—For LED sources—1500/500 MHz-km @850/1300nm.
- Optical Glass—For Laser sources—2000/500 MHz-km @850/1300nm. VCSEL Laser sources—Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links.
- CABLE—The cable is duplex zipcord graded index 50/125µm multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows.
- BULK CABLE & CABLE ASSEMBLY CONFIGURATION—

Accessory Product Details

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

Services

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

HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)

Cabling

Cable type=

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

Maximum distance=

10Gbps Transfer Rate (Ethernet)=300m

Notes

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

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

Services

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

Accessory Product Details

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

Notes

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

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

Services

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

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

Notes

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

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

Services

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

Accessory Product Details

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

Notes

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

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

Services

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

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

Notes

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

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

Services

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

Accessory Product Details

<p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A)</p>	<p>Notes</p>	<p>Cable Specs—Graded-index, bendable fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.</p> <ul style="list-style-type: none"> • Core diameter—50um ±3um, Cladding diameter—125um ±2um—Coating diameter—245 ± 10um • Bandwidth—3000 MHz-km @ 850nm (Laser) • Jacket Color—Blue • Jacket Material—Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color—White • Outer Jacket Print—HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss—Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation—3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	<p>Services</p>	<p>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.</p>
<p>HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)</p>	<p>Notes</p>	<p>Cable Specs—Graded-index, bendable fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.</p> <ul style="list-style-type: none"> • Core diameter—50um ±3um, Cladding diameter—125um ±2um—Coating diameter—245 ± 10um • Bandwidth—3000 MHz-km @ 850nm (Laser) • Jacket Color—Blue • Jacket Material—Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic • Boot Color—White • Outer Jacket Print—HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. • Insertion Loss—Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m • Maximum Cable Attenuation—3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	<p>Services</p>	<p>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.</p>
<p>HP X410 1U Universal 4-post Rack Mounting Kit (J9583A)</p>	<p>Notes</p>	<p>The rack mounting kit supports the 1U, full width switches in the following switch series and the power supply—V1810 Series, E2510 Series, E2520 Series, E2610 Series, E2810 Series, E2910 Series, E3500 Series, and the E620 Power Supply</p> <p>This universal rack mounting kit is design to fit the following racks—HP 10K 10642, HP 10K 10842, Panduit CN, Panduit CS, Wrightline Vantage S2, APC Netshelter 600mm, and APC Netshelter 800mm. It may well fit many other brands and models too.</p>
	<p>Services</p>	<p>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.</p>

Accessory Product Details

HP Identity Driven Manager 3.0 Software--500-User License (J9438A)	Identity Driven Manager 3.0 software and license for managing up to 500 users.
RADIUS server support	Microsoft Network Policy Server on Windows Server 2008 (32-bit) Microsoft Internet Authentication Service (IAS) on Windows Server 2003 (32-bit) FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2) RADIUS on the Network Access Controller 800 FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2)
Features	Intuitive Explorer-style interface OpenView NNM integration Application of policies by user identity <ul style="list-style-type: none">• Auto VLAN assignment• Auto set quality of service by user• Auto set bandwidth assignment by user Rule-based access rights deployment Dynamic rights assignment based on <ul style="list-style-type: none">• Time• Location• User system Auto-discovery of <ul style="list-style-type: none">• RADIUS servers• Realms• Users
Notes	Additional specifications <ul style="list-style-type: none">• Supports environments with up to 10,000 users.• Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed. Requires the HP PCM Plus 3.0 or greater network management platform. <ul style="list-style-type: none">• Please see HP PCM Plus 3.0 for hardware and software system requirements.
Services	3-Year, 9x5 SW phone support, software updates (UQ124E) 3-year, 24x7 SW phone support, software updates (UQ125E) Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP Identity Driven Manager 3.0 Software--Additional 1,000-User License (J9440A)	License to add support for managing an additional 1,000 users with the Identity Driven Manager 3.0 product.
	RADIUS server support —
	Features —
	Notes Additional specifications
	<ul style="list-style-type: none"> • Supports environments with up to 10,000 users. • Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.
	Requires the HP PCM Plus 3.0 or greater network management platform.
	<ul style="list-style-type: none"> • Please see HP PCM Plus 3.0 for hardware and software system requirements. Requires the HP Identity Driven Manager 3.0 base product (J9438A).
	Multiple licenses for additional 1,000 users can be added to the base HP Identity Driven Manager product to support larger numbers of users.
	Services 3-year, 24x7 SW phone support, software updates (UQ119E) 3-Year, 9x5 SW phone support, software updates (UQ118E)
	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 Identity Driven Manager 3.0 Software--Unlimited-User License (J9439A)	Identity Driven Manager 3.0 software and license for managing an unlimited number of users.
	RADIUS server support Microsoft Network Policy Server on Windows Server 2008 (32-bit) Microsoft Internet Authentication Service (IAS) on Windows Server 2003 (32-bit) FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2) RADIUS on the Network Access Controller 800 FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2)
	Features Intuitive Explorer-style interface OpenView NNM integration Application of policies by user identity
	<ul style="list-style-type: none"> • Auto VLAN assignment • Auto set quality of service by user • Auto set bandwidth assignment by user
	Rule-based access rights deployment
	Dynamic rights assignment based on-
	<ul style="list-style-type: none"> • Time • Location • User system
	Auto-discovery of-
	<ul style="list-style-type: none"> • RADIUS servers • Realms • Users

Accessory Product Details

Notes

Additional specifications

- Supports environments with up to 10,000 users.
- Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.

Requires the HP PCM Plus 3.0 or greater network management platform.

Services

Please see HP PCM Plus 3.0 for hardware and software system requirements.

3-year, 24x7 SW phone support, software updates (UQ133E)

3-Year, 9x5 SW phone support, software updates (UQ132E)

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.

To learn more, visit www.hp.com/networking

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Overview

Models

HP 830 24-Port PoE+ Unified Wired-WLAN Switch

JG640A

HP 830 8-Port PoE+ Unified Wired-WLAN Switch

JG641A

Key features

- Unified wired and wireless services for branch offices
- A system-wide approach to WLAN reliability through Wi-Fi Clear Connect
- PoE+ capability
- Built-in IEEE 802.1X and portal authentication servers
- 8-port and 24-port versions available

Product overview

The IEEE 802.11ac-ready HP 830 Unified Wired-WLAN Switch Series integrates both wireless controller and 1000 Mb/s Ethernet switch functions. The switch series provides 1000 Mb/s Ethernet ports, with each supporting a maximum of up to 30 W of PoE+ power and IEEE 802.11 a/b/g/n APs while delivering unified wired and wireless access control functions. The HP 830 24-Port PoE+ Unified Wired-WLAN Switch provides two 10GbE slots on the rear panel to relieve transmission bottlenecks at the core of a WLAN network.

This series provides edge-to-core unified access and consistent WLAN services to the small and medium branch offices of enterprises that are deploying the HP 10500/7500 20G Unified Wired-WLAN Module at their central (or main) offices.

The HP 830 Unified Wired-WLAN Switch Series is part of the HP Enterprise Mobility solution.

Features and benefits

Management

- **Wi-Fi Clear Connect**
provides a system-wide approach to help ensure WLAN reliability by proactively determining and adjusting to changing RF conditions via advanced radio resource management and identifying rogue activity—these capabilities optimize WLAN performance by making decisions at a system-wide level
- **Advanced radio resource management**
 - **Automatic radio power adjustments**
includes real-time power adjustments based on changing environmental conditions and signal coverage adjustment
 - **Automatic radio channel**
provides intelligent channel switching and real-time interference detection
 - **Intelligent client load balancing**
balances the number of clients across multiple APs to optimize AP and client throughput
- **Enterprise network management**
is provided by HP Intelligent Management Center (IMC) Platform software and the IMC Wireless Services Manager Software Module, which effectively integrate traditionally disparate management tools into one easy-to-use interface
- **Secure controller management**
manages the controller securely from a single location with IMC or any other SNMP management station—controller supports SNMPv3 as well as SSHv2 and SSL for secure CLI and Web management—console port is available as a pass-through to the switch console function

Quality of Service (QoS)

- **IEEE 802.1p prioritization**
delivers data to devices based on the priority and type of traffic
- **Class of Service (CoS)**
sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ

Overview

Security

- **Web-based authentication**
provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
- **IEEE 802.1X and RADIUS network logins**
supports port-based and SSID-based 802.1X authentication and accounting
- **WEP, WPA2, or WPA encryption**
can be deployed at the AP to lock out unauthorized wireless access by authenticating users prior to granting network access[†]
robust Advanced Encryption Standard (AES) or Temporal Key Integrity Protocol (TKIP) encryption secures the data integrity of wireless traffic
- **Integrated intrusion detection system (IDS) support**
provides support for hybrid and dedicated modes[†]detects flood, spoofing, and weak IV attacks[†]displays statistics (events) and history[†]supports configuration of detection policies
- **Media access control (MAC) authentication**
provides simple authentication based on a user's MAC address[†]supports local or RADIUS-based authentication
- **Secure user isolation**
virtual AP services enable the network administrator to provide specific services for different user groups, allowing effective resource sharing, and simplifying network maintenance and management
- **Secure access by location**
AP location-based user access control helps ensure that wireless users can access and authenticate only to preselected APs, enabling system administrators to control the locations where a wireless user can access the network
- **Endpoint Admission Defense**
integrated wired and wireless Endpoint Admission Defense (EAD) helps ensure that only wireless clients who comply with mandated enterprise security policies can access the network, reducing threat levels caused by infected wireless clients and improving the overall security of the wireless network
- **Public Key Infrastructure (PKI)**
is used to control access
- **Authentication, authorization, and accounting (AAA)**
uses an embedded authentication server or external AAA server for local users

Connectivity

- **IEEE 802.3at Power over Ethernet (PoE+)**
provides 30 W of support per port for PoE+-capable devices such as IP phones, wireless access points, and security cameras, as well as any IEEE 802.3af-compliant end device[†]eliminates the cost of additional electrical cabling that would be needed in IP phone and WLAN deployments[†]the HP 830 8-Port PoE+ Unified Wired-WLAN Switch supports up to 5 ports at 30 W[†]the 24-port model can support up to 24 ports at up to 30 W depending on the power source
- **Loopback**
supports internal loopback testing for maintenance purposes and an increase in availability[†]loopback detection protects against incorrect cabling or network configurations and can be enabled on a per-port or per-VLAN basis for added flexibility
- **IPv6**
 - **IPv6 host**
enables controllers to be managed and deployed at the IPv6 network's edge
 - **Dual stack (IPv4 and IPv6)**
transitions customers from IPv4 to IPv6, supporting connectivity for both protocols
 - **MLD snooping**
directs IPv6 multicast traffic to the appropriate interface, preventing traffic flooding
 - **IPv6 ACL/QoS**
supports ACL and QoS for IPv6 network traffic

Performance

- **Flexible forwarding modes**
supports both distributed and centralized forwarding mode[†]in a wireless network using centralized forwarding, all wireless traffic is sent to the HP 830 Unified Wired-WLAN Switch for processing[†]if the distributed mode is configured, authenticated clients can continue to access local resources in the event that connectivity to the HP 830 Unified Wired-WLAN Switch is lost

Overview

- **Fast roaming**
supports Layer 3 roaming and fast roaming, satisfying the most demanding voice service requirements

Scalability

- **Pay as you grow**
license upgrades allow you to increase support for additional access points without the need to buy additional costly hardware and use additional valuable space in a rack

Resiliency and high availability

- **High reliability**
supports N+1 and N+N backup

Layer 2 switching

- **VLAN support and tagging**
supports IEEE 802.1Q with 4,094 simultaneous VLAN IDs
- **Spanning Tree Protocol (STP)**
supports standard IEEE 802.1D STP, IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) for faster convergence, and IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- **Port mirroring**
duplicates port traffic (ingress and egress) to a local or remote monitoring port
- **Jumbo packet support**
supports frame sizes up to 9K-byte (switch) and up to 4K-byte (controller) to improve the performance of large data transfers

Layer 3 routing

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

Comprehensive portfolio

- **Access point support**
includes HP MSM430, MSM460, MSM466, MSM466-R, WA2620, WA2620E, WA2612, and WA2610E models

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**
includes all offered software releases for as long as you own the product‡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.

Standard Switch Enclosures

HP 830 8P PoE+ Unifd Wired-WLAN Swch	JG641A
<ul style="list-style-type: none">8 RJ-45 dual-personality 10/100/1000 ports2 SFP 1000 Mbps ports (Min 0 / Max 2)1 RJ-45 serial console port	See Configuration Note^{1, 2, 3}
PDU CABLE NA/MEX/TW/JP	JG641A#B2B
<ul style="list-style-type: none">C15 PDU Jumper Cord (NA/MEX/TW/JP)	
PDU CABLE ROW	JG641A#B2C
<ul style="list-style-type: none">C15 PDU Jumper Cord (ROW)	
220 NA	JG641A#B2E
<ul style="list-style-type: none">NEMA L6-20P Cord	
HP 830 24P PoE+ Unifd Wired-WLAN Swch	JG640A
<ul style="list-style-type: none">24 RJ-45 auto-negotiating 10/100/1000 ports4 SFP dual-personality ports[†]Duplex²-full only (Min 0 / Max 4)2 extended module slots1 RJ-45 serial console port	See Configuration Note^{1, 2, 3}
PDU CABLE NA/MEX/TW/JP	JG640A#B2B
<ul style="list-style-type: none">C15 PDU Jumper Cord (NA/MEX/TW/JP)	
PDU CABLE ROW	JG640A#B2C
<ul style="list-style-type: none">C15 PDU Jumper Cord (ROW)	
220 NA	JG640A#B2E
<ul style="list-style-type: none">NEMA L6-20P Cord	
PDU CABLE NA/MEX/TW/JP	JG647A#B2B
<ul style="list-style-type: none">C15 PDU Jumper Cord (NA/MEX/TW/JP)	
220 NA	JG647A#B2E
<ul style="list-style-type: none">NEMA L6-20P Cord	
PDU CABLE NA/MEX/TW/JP	JG646A#B2B
<ul style="list-style-type: none">C15 PDU Jumper Cord (NA/MEX/TW/JP)	
220 NA	JG646A#B2E
<ul style="list-style-type: none">NEMA L6-20P Cord	

Configuration Rules²

Note 1 The following Transceivers install into this Switch²



Configuration

HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B

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

Note 3 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)

Remarks

The TAA skus in the 800 Unified Wired-WLAN Switches are US available only.

Box Level CTO Models

CTO Solution Sku

HP 830 CTO Unifd Wrd-WLAN Swch Solution	JG662A
<ul style="list-style-type: none"> SSP trigger sku 	

CTO Switch Chassis

HP 830 8P PoE+ Unifd Wired-WLAN Swch	JG641A
<ul style="list-style-type: none"> 8 RJ-45 dual-personality 10/100/1000 ports 2 SFP 1000 Mbps ports (Min 0 / Max 2) 1 RJ-45 serial console port 	See Configuration Note=1, 2, 3, 4
PDU CABLE NA/MEX/TW/JP	JG641A#B2B
<ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	JG641A#B2C
<ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	
220 NA	JG641A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord 	
HP 830 24P PoE+ Unifd Wired-WLAN Swch	JG640A
<ul style="list-style-type: none"> 24 RJ-45 auto-negotiating 10/100/1000 ports 4 SFP dual-personality ports=Duplex=full only (Min 0 / Max 4) 2 extended module slots 1 RJ-45 serial console port 	See Configuration Note=1, 2, 3, 4
PDU CABLE NA/MEX/TW/JP	JG640A#B2B
<ul style="list-style-type: none"> C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU CABLE ROW	JG640A#B2C
<ul style="list-style-type: none"> C15 PDU Jumper Cord (ROW) 	
220 NA	JG640A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord 	



Configuration

PDU CABLE NA/MEX/TW/JP JG647A#B2B
 • C15 PDU Jumper Cord (NA/MEX/TW/JP)

220 NA JG647A#B2E
 • NEMA L6-20P Cord

PDU CABLE NA/MEX/TW/JP JG646A#B2B
 • C15 PDU Jumper Cord (NA/MEX/TW/JP)

220 NA JG646A#B2E
 • NEMA L6-20P Cord

Configuration Rules⁻

Note 1 The following Transceivers install into this Controller⁻(Use #0D1 if switch is CT00
 HP X125 1G SFP LC LH40 1310nm Transceiver JD061A
 HP X120 1G SFP LC LH40 1550nm Transceiver JD062A
 HP X125 1G SFP LC LH70 Transceiver JD063B
 HP X120 1G SFP LC SX Transceiver JD118B
 HP X120 1G SFP LC LX Transceiver JD119B

Note 2 If the Switch Chassis is to be Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the JG662A - HP 800 CTO Enablement. (Min 1/Max 1 Switch per SSP)

Note 3 Localization required on orders without #B2B, #B2C, or #B2E options.

Note 4 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)

Remarks⁻

The TAA skus in the 800 Unified Wired-WLAN Switches are US available only.

Modules

Ethernet Modules

(Switch JG640A and JG646A) System (std 0 // max 2) User Selection (min 0 // max 2) per enclosure

HP 830 Unified Wired-WLAN Switch Uplink Module JG643A
 • min=0 \ max=1 XFP Transceivers See Configuration Note⁻1

Configuration Rules⁻

Note 1 The following Transceivers install into this Module⁻(Use #0D1 if switch is CTO)
 HP X130 10G XFP SC LR Transceiver JD108B
 HP X130 10G XFP LC SR Transceiver JD117B
 HP X135 10G XFP LC ER Transceiver JD121A

Transceivers



Configuration

SFP Transceivers

HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP X125 1G SFP LC LH40 1310nm XCVR	JD061A
HP X120 1G SFP LC LH40 1550nm XCVR	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B

XFP Transceivers

HP X130 10G XFP LC LR Transceiver	JD108B
HP X130 10G XFP LC SR Transceiver	JD117B
HP X135 10G XFP LC ER Transceiver	JD121A

Internal Power Supplies

All switches include power supplies

Switch Options

External Power Supplies

HP RPS1600 Redundant Power System	JG136A
<ul style="list-style-type: none"> Height = 1U includes 1 x c13, 1600w and Power Supply port 	See Configuration Note ^{2, 3}
HP RPS1600 1600W AC Power Supply	JG137A
<ul style="list-style-type: none"> Installs into JG136A only 	See Configuration Note ^{1, 3}

Configuration Rules²

Note 1	If this power supply is selected, The JG136A - HP A-RPS1600 Redundant Power System must be on order or onsite.
Note 2	Localization required.
Note 3	Only supported on the JG640A switch. Switch only supports 1 JG136A and 1 JG137A Power supply systems.

Licenses

(Switch JG641A and JG647A) System (std 0 // max 1) User Selection (min 0 // max 1) per enclosure

(Switch JG640A and JG646A) System (std 0 // max 3) User Selection (min 0 // max 3) per enclosure

HP 830 Unifd Wrd-WLAN Swch 12 AP E-LTU	JG648AAE
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Remarks² This SKU is optional to increase the AP by a count of 12 per E-LTU

Technical Specifications

HP 830 24-Port PoE+ Unified Wired-WLAN Switch (JG640A)

Ports	24 RJ-45 auto-negotiating 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX IEEE 802.3ab Type 1000BASE-T)†Media Type=Auto-MDIX†Duplex=10BASE-T/100BASE-TX=half or full† 1000BASE-T=full only 4 SFP dual-personality ports†Duplex=full only†(4 10/100/1000BASE-T and 1000BASE-X Gigabit Ethernet combination) 2 extended module slots 1 RJ-45 serial console port
Physical characteristics	Dimensions 17.32(w) x 16.89(d) x 1.72(h) in (44 x 42.9 x 4.36 cm) (1U height) Weight 15.87 lb (7.2 kg)
Memory and processor	Processor Dual core @ 750 MHz, 1 GB flash, 512 MB DDR2 SDRAM
Mounting	EIA standard 19-inch telco rack or equipment cabinet (hardware included)
Performance	Switch fabric speed 88 Gb/s MAC address table size 8000 entries
Environment	Operating temperature 32°F to 113°F (0°C to 45°C) Operating relative humidity 5% to 95%, noncondensing Nonoperating/Storage temperature -40°F to 158°F (-40°C to 70°C) Nonoperating/Storage relative humidity 5% to 95%, noncondensing
Electrical characteristics	Frequency 50/60 Hz Maximum heat dissipation 307 BTU/hr (323.89 kJ/hr) Voltage 100-240 VAC DC Voltage -52 to -55 VDC Maximum power rating 90 W Idle power 53 W PoE power 370 W Notes Idle power is the actual power consumption of the device with no ports connected. PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). Internal power supply delivers PoE+ to a maximum of 11 ports. PoE+ can be delivered to all 24 ports with the use of an optional redundant power system.
Safety	UL 60950-1†CAN/CSA 22.2 No. 60950-1†IEC 60950-1†EN 60950-1†FDA 21 CFR Subchapter J
Emissions	EN 55022 Class A†CISPR 22 Class A†ICES-003 Class A†AS/NZS CISPR 22 Class A†EN 61000-3-2†EN 61000-3-3†VCCI-3 CLASS A†VCCI-4 CLASS A†ETSI EN 300 386†FCC Part 15 (CFR 47) CLASS
Immunity	EN EN 55024, CISPR24 & ETSI EN 300 386
Management	IMC - Intelligent Management Center†command-line interface†Web browser†SNMP Manager†Telnet†HTTPS†RMON1†FTP†IEEE 802.3 Ethernet MIB†Ethernet Interface MIB
Features	Default supported APs=24 Maximum supported APs=60 (via the optional purchase of the 12-Access Point E-LTU) Maximum supported users=1000 Maximum supported users via local portal authentication=1000 Maximum supported users via local authentication=1000 Maximum supported configured SSIDs=64

Technical Specifications

	Maximum supported ACLs=2000 Supported MSM APs are automatically discovered, Comware firmware is loaded, and the APs can be fully managed.
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 830 8-Port PoE+ Unified Wired-WLAN Switch (JG641A)

Ports	8 RJ-45 dual-personality 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T)†Media Type=Auto-MDIX†Duplex=10BASE-T/100BASE-TX=half or full†1000BASE-T=full only 2 SFP 1000 Mbps ports 1 RJ-45 serial console port	
Physical characteristics	Dimensions	17.32(w) x 10.63(d) x 1.72(h) in (44 x 27 x 4.36 cm) (1U height)
	Weight	8.82 lb (4 kg)
Memory and processor	Processor	Dual core @ 750 MHz, 1 GB compact flash, 512 MB DDR2 SDRAM
Mounting	EIA standard 19-inch telco rack or equipment cabinet (hardware included)	
Performance	Switch fabric speed	20 Gb/s
	MAC address table size	8000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	5% to 95%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing
Electrical characteristics	Frequency	50/60 Hz
	Maximum heat dissipation	130 BTU/hr (137.15 kJ/hr)
	Voltage	100-240 VAC
	Maximum power rating	38 W
	Idle power	28 W
	PoE power	180 W
	Notes	PoE power is the power supplied by the internal power supply. It is dependent on the type and quantity of power supplies and may be supplemented with the use of an external power supply (EPS). Internal power supply delivers PoE+ to a maximum of five ports.
Safety	UL 60950-1†CAN/CSA 22.2 No. 60950-1†IEC 60950-1†EN 60950-1†FDA 21 CFR Subchapter J	
Emissions	EN 55022 Class A†CISPR 22 Class A†ICES-003 Class A†AS/NZS CISPR 22 Class A†EN 61000-3-2†EN 61000-3-3†VCCI-3 CLASS A†VCCI-4 CLASS A†ETSI EN 300 386†FCC Part 15 (CFR 47) CLASS	
Immunity	EN	EN 55024, CISPR24 & ETSI EN 300 386
Management	IMC - Intelligent Management Center†command-line interface†Web browser†SNMP Manager†Telnet†HTTPS†RMON1†FTP†IEEE 802.3 Ethernet MIB†Ethernet Interface MIB	
Features	Default supported APs=12 Maximum supported APs=24 (via the optional purchase of the 12-Access Point E-LTU) Maximum supported users=1000 Maximum supported users via local portal authentication=1000 Maximum supported users via local authentication=1000 Maximum supported configured SSIDs=64	

Technical Specifications

Maximum supported ACLs=2000

Supported MSM APs are automatically discovered, Comware firmware is loaded, and

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)

General protocols

RFC 768 UDP
 RFC 791 IP
 RFC 792 ICMP
 RFC 793 TCP
 RFC 826 ARP
 RFC 854 TELNET
 RFC 855 Telnet Option Specification
 RFC 858 Telnet Suppress Go Ahead Option
 RFC 894 IP over Ethernet
 RFC 950 Internet Standard Subnetting Procedure
 RFC 959 File Transfer Protocol (FTP)
 RFC 1122 Host Requirements
 RFC 1141 Incremental updating of the Internet checksum
 RFC 1144 Compressing TCP/IP headers for low-speed serial links
 RFC 1256 ICMP Router Discovery Protocol (IRDP)
 RFC 1321 The MD5 Message-Digest Algorithm
 RFC 1334 PPP Authentication Protocols (PAP)
 RFC 1350 TFTP Protocol (revision 2)
 RFC 1812 IPv4 Routing
 RFC 1944 Benchmarking Methodology for Network Interconnect Devices
 RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
 RFC 2104 HMAC=Keyed-Hashing for Message Authentication
 RFC 2246 The TLS Protocol Version 1.0
 RFC 2284 EAP over LAN
 RFC 2644 Directed Broadcast Control
 RFC 2864 The Inverted Stack Table Extension to the Interfaces Group MIB
 RFC 2866 RADIUS Accounting
 RFC 2869 RADIUS Extensions
 RFC 3268 Advanced Encryption Standard (AES)
 Ciphersuites for Transport Layer Security (TLS)
 RFC 3619 Ethernet Automatic Protection Switching (EAPS)

IP multicast

RFC 1112 IGMP

RFC 2373 IPv6 Addressing Architecture
 RFC 2375 IPv6 Multicast Address Assignments
 RFC 2460 IPv6 Specification
 RFC 2461 IPv6 Neighbor Discovery
 RFC 2462 IPv6 Stateless Address Auto-configuration
 RFC 2463 ICMPv6
 RFC 2464 Transmission of IPv6 over Ethernet Networks
 RFC 2466, Management Information Base for IP Version 6 - ICMPv6
 RFC 2526 Reserved IPv6 Subnet Anycast Addresses
 RFC 2553 Basic Socket Interface Extensions for IPv6
 RFC 2563 ICMPv6
 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only)
 RFC 3315 DHCPv6 (client and relay)
 RFC 3363 DNS support
 RFC 3484 Default Address Selection for IPv6
 RFC 3493 Basic Socket Interface Extensions for IPv6
 RFC 3513 IPv6 Addressing Architecture
 RFC 3542 Advanced Sockets API for IPv6
 RFC 3587 IPv6 Global Unicast Address Format
 RFC 3596 DNS Extension for IPv6
 RFC 4193, Unique Local IPv6 Unicast Addresses
 RFC 4443 ICMPv6
 RFC 4541 IGMP & MLD Snooping Switch
 RFC 4861 IPv6 Neighbor Discovery
 RFC 4862 IPv6 Stateless Address Auto-configuration
 RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

MIBs

RFC 1229 Interface MIB Extensions
 RFC 1643 Ethernet MIB
 RFC 1757 Remote Network Monitoring MIB
 RFC 2011 SNMPv2 MIB for IP
 RFC 2012 SNMPv2 MIB for TCP
 RFC 2013 SNMPv2 MIB for UDP
 RFC 2571 SNMP Framework MIB
 RFC 2572 SNMP-MPD MIB
 RFC 2613 SMON MIB

IEEE 802.11g Further Higher Data Rate Extension in the 2.4 GHz Band
 IEEE 802.11h Dynamic Frequency Selection
 IEEE 802.11i Medium Access Control (MAC) Security Enhancements
 IEEE 802.11n WLAN Enhancements for Higher Throughput
 Note=All of the above standards are now included in IEEE 802.11-2012

Network management

RFC 1155 Structure of Management Information
 RFC 1905 SNMPv2 Protocol Operations
 RFC 2573 SNMPv3 Applications
 RFC 2574 SNMPv3 User-based Security Model (USM)
 RFC 2575 VACM for SNMP
 SNMPv1/v2c

QoS/CoS

RFC 2474 DS Field in the IPv4 and IPv6 Headers
 RFC 2475 DiffServ Architecture
 RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP

Security

IEEE 802.1X Port Based Network Access Control
 RFC 3394 Advanced Encryption Standard (AES) Key Wrap Algorithm
 RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP)
 Access Control Lists (ACLs)
 Guest VLAN for 802.1x
 Secure Sockets Layer (SSL)
 SSHv2 Secure Shell
 Web Authentication
 WPA (Wi-Fi Protected Access)/WPA2

IKEv1

RFC 3748 - Extensible Authentication Protocol (EAP)

Technical Specifications

RFC 2236 IGMPv2

RFC 2934 Protocol Independent Multicast
MIB for IPv4

RFC 4541 Considerations for Internet Group
Management Protocol (IGMP) and Multicast
Listener

Discovery (MLD) Snooping Switches

IPv6

RFC 1350 TFTP

RFC 1881 IPv6 Address Allocation
Management

RFC 1887 IPv6 Unicast Address Allocation
Architecture

RFC 1981 IPv6 Path MTU Discovery

RFC 2292 Advanced Sockets API for IPv6

RFC 2863 The Interfaces Group MIB

RFC 2932 IP (Multicast Routing MIB)

RFC 2933 IGMP MIB

Mobility

IEEE 802.11a High Speed Physical Layer in
the 5 GHz Band

IEEE 802.11b Higher-Speed Physical Layer
Extension in the 2.4 GHz Band

IEEE 802.11d Global Harmonization

IEEE 802.11e QoS enhancements

Accessories

HP 830 Unified Wired-WLAN Switch Series accessories

HP 830 24-Port PoE+ Unified Wired-WLAN Switch (JG640A)

HP 830 Unified Wired-WLAN Switch Uplink Module	JG643A
HP X130 10G XFP LC LR Transceiver	JD108B
HP X130 10G XFP LC SR Transceiver	JD117B
HP X135 10G XFP LC ER Transceiver	JD121A
HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP RPS1600 Redundant Power System	JG136A
HP RPS1600 1600W AC Power Supply	JG137A
HP 830 Unified Wired-WLAN Switch 12-Access Point E-LTU	JG648AAE
HP 2M C14 to C13 Power Cord	J9959A

HP 830 8-Port PoE+ Unified Wired-WLAN Switch (JG641A)

HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP 830 Unified Wired-WLAN Switch 12-Access Point E-LTU	JG648AAE

To learn more, visit: www.hp.com/networking

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Overview

Models

HP IMC Standard Software Platform with 50-node E-LTU

JG747AAE

Key features

- Highly flexible and scalable deployment
- Powerful administration control
- Rich resource management
- Detailed performance monitoring and management
- Flexible centralized reporting

Product overview

HP Intelligent Management Center (IMC) Standard Software Platform is a standalone comprehensive management solution that delivers integrated modular management capabilities across fault, configuration, accounting, performance, and security needs.

IMC Standard software is designed on a service-oriented architecture (SOA) using a business application flow model as its core to allow the management of resources, services, and users to be fully integrated. This software enables an enterprise business to grow its management in scale and seamlessly accommodate new technologies. With its SOA, IMC software is capable of incorporating additional modules to its base platform to provide deeper functionality.

IMC software supports the management of HP and third-party devices, and is compatible with Microsoft® Windows® and Linux operating systems. IMC Standard software comes with an initial license for 50 managed devices. Additional node licenses are available to extend the node limit.

Features and Benefits

Management

- **HP Intelligent Management Center (IMC) Standard Software**
cohesively integrates fault management, element configuration, and network monitoring from a central vantage point—built-in support for third-party devices enables network administrators to centrally manage all network elements with a variety of automated tasks, including discovery, categorization, baseline configurations, and software images—IMC software provides configuration comparison tools, version tracking, change alerts, and more
- **Modular architecture**
new modules can be added to enrich network management capabilities—modules for user access management, VPN management, and traffic analysis can be quickly added to provide instant benefits—the architecture allows modules to share information and provide collaborative policy creation and reports
- **Live update enhancements**
IMC Standard software now provides notification and download availability of the latest IMC patches as well as new firmware version releases for HP devices
- **Virtualization management**
- HP IMC software is one of the first management tools to integrate management and monitoring of both virtual and physical networks
 - provides insight and management of virtual networks and reduces migration complexity by aligning and automating network policies with virtual images
 - supports VMware, Hyper-V, and KVM—IMC Virtual Network Management software also supports automatic tracking of the network access port of virtual machines
- **Highly flexible and scalable deployment models**
IMC Standard software delivers an extensive set of capabilities for managing large heterogeneous networks, and provides scalability and high availability through a flexible distributed deployment model—with its modular design, IMC software can be deployed across multiple servers to provide increased scalability and resilience
- **NEW Rich resource management**

Overview

IMC software provides powerful network discovery and topology, including a detailed inventory of the network and highly accurate depictions of how it is configured—supported views include Layer 2 and 3, as well as VLAN topology and the ability to create custom views like a dashboard homepage—customization enables administrators to organize and control the network infrastructure—IMC now supports multidevice context and Intelligent Resilient Framework

- **Flexible, centralized reporting**

centralized report management simplifies an organization's report administration—the software's flexible historical reports provide the information necessary for network trend analysis and capacity planning, and offer predefined reports or customization options to define parameters—reports can be viewed in a number of formats, including .pdf and .xls, and can be sent automatically via email, or can be scheduled to run at a set timeframe

- **Access control list management**

IMC software simplifies the definition, deployment, and control of ACLs with effective policy-based control of network security and quality of service (QoS) across an organization's network infrastructure—ACL rule optimization helps ensure efficient use of ACL resources on devices

- **Identification and access management**

with the addition of the optional IMC User Access Manager (UAM) module, the system implements unified and centralized access management, supporting access through authentications, including LAN, WAN, WLAN, and VPN—it supports strong authentication using smart card, certificate, and others, and supports various methods for endpoint access control and identity-based network services that efficiently integrate the management of user resources and services

- **Compliance Center feature**

associates compliance policies with devices that need to be checked—the compliance check function can promptly fix configuration and security problems in the network—if incorrect configurations are found, the data for the specific device and the configuration error are included in the Compliance Center report—IMC now includes predefined policies for the Compliance Center as well as alarm generation when devices fail compliance checks

- **Virtual Connect support**

IMC software supports add/remove connections for Virtual Connect Manager and displays the connect information from the device detail page

- **IMC mobile application**

IMC software provides a new mobile application for the iPhone and Android operating systems—this provides administrators with the flexibility to monitor the network while they are away from their offices

- **Telnet/SSH proxy**

with the Telnet/SSH proxy, an administrator can use a browser to remotely access and manage devices through Telnet/SSH without installing a Telnet/SSH tool on the PC client used to access the device—this promotes secure and controlled access to devices while providing auditing of changes on any device

- **Unified Task Management and Wizard Center**

the IMC Wizard Center feature services many of the configuration wizards found within IMC software, such as quick start and the third-party device configuration wizard—new to this release is Unified Task Management, a section that hosts all tasks within IMC software

- **NEW Traffic topology**

based on the network's physical topology, it enables users to view the traffic conditions of various links—utilizes IMC geolocation data to automatically derive and place topographic maps

- **Customized functions and third-party device support**

IMC Standard software extends device management and configuration functions—users can either extend an existing function to support third-party devices by compiling interactive scripts and XML files, or customize a function by compiling interactive scripts, XML files, and UI configuration files

- **Performance views**

IMC software provides new ways to view performance data—TopN, trend analysis, summary data, and at a glance—the GUI is flexible and allows for instant viewing, switching between multiple views, and quick access to the various performance summary views

- **Security Control Center**

the Security Control Center (SCC) can be used to define policies and enforce device settings consistently on selected devices—you can also use policies to manage VLANs and VLAN port settings or automatically apply a configuration template on newly discovered devices—you can configure policies to send alarms when device configurations become noncompliant

- **Network data collection**

generates, packages, and sends archived information about your network, device, or IMC software to the appropriate HP support or sales organizations in one simple step—this feature gathers the data you selected and generates reports and data files containing the relevant information—it delivers the reports to your selected destination by email, FTP, SFTP, or to a file

Overview

location

- **Service Monitor**

monitors the availability and responsiveness of common network services via probes that you configure²the probes reside on local and remote IMC software agents and test services from servers and devices that you select when configuring the probes

Warranty and support

- **Electronic and telephone support**

limited electronic and business-hours telephone support is available from HP for the entire warranty period³to reach our support centers, refer to www.hp.com/networking/contact-support⁴for 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/support⁴for details on the software releases available with your product purchase, refer to www.hp.com/networking/warrantysummary

Technical Specifications

HP IMC Standard Software Platform with 50-node E-LTU (JG747AAE)

Minimum system hardware	<p>Running environment requirement¹-client/server architecture² server requirement</p> <p>Intel® Pentium® 4 3.0 GHz processor 4 GB RAM memory 50 GB storage 10/100 Mbps NIC 48X CD-ROM drive, video card supporting 1024 x 768 resolution, and sound card</p>
Recommended system hardware	<p>3.0 GHz Intel® Xeon® or Intel® Core™2 Duo processor or equivalent processor 4 GB RAM memory 100 GB storage 10/100 Mbps NIC 48X CD-ROM drive, video card supporting 1024 x 768 resolution, and sound card</p>
Recommended software	<p>Windows® Server 2003 with Service Pack 2 Windows® Server 2003 X64 with Service Pack 2 and KB942288 Windows® Server 2003 R2 with Service Pack 2 Windows® Server 2003 R2 X64 with Service Pack 2 with KB942288 Windows® Server 2008 with Service Pack 2 Windows® Server 2008 X64 with Service Pack 2 Windows® Server 2008 R2 with Service Pack 1 Red Hat Enterprise Linux 5 Red Hat Enterprise Linux 5 X64 Red Hat Enterprise Linux 5.5 Red Hat Enterprise Linux 5.5 X64 Red Hat Enterprise Linux 6.1 X64</p>
Minimum system hardware	<p>Client requirement</p> <p>Intel® Pentium® 4 2.0 GHz processor 2 GB RAM memory 50 GB storage 10/100 Mbps NIC 48X CD-ROM drive, video card supporting 1024 x 768 resolution, and sound card</p>
Recommended system hardware	<p>2.0 GHz Intel® Pentium® III or equivalent processor 2 GB RAM memory 50 GB storage 10/100 Mbps NIC 48X CD-ROM drive, video card supporting 1024 x 768 resolution, and sound card</p>
Recommended software	<p>Microsoft® Windows® XP</p>
Browsers	<p>Firefox 3.6 or later is recommended</p>
Additional requirements	<p>Database—Microsoft SQL Server 2005 Service Pack 3 (Windows only), Microsoft SQL Server 2008 Service Pack 3 (Windows only), Microsoft SQL Server 2008 Service Pack 3 (64-bit—Windows 64-bit only), Microsoft SQL Server 2008 R2 Service Pack 1 (Windows only), Microsoft SQL Server 2008 R2 Service Pack 1 (64-bit—Windows only), Oracle 11g Release 1 (Linux only), Oracle 11g Release 2 (Linux only), Oracle 11g Release 2 (64-bit—Linux only), MySQL Enterprise Server 5.1 (Linux and Windows—up to 1,000 devices supported), and MySQL Enterprise Server 5.5 (Linux and Windows—up to 1,000 devices supported)</p>
Notes	<p>For fewer than 500 nodes, 1 CPU is sufficient³—from 500 to 2,000 nodes, there should be 2 CPUs or 1 dual-core CPU³—for more than 2,000 nodes, there should be 4 CPUs or 2 dual-core CPUs.</p>

Technical Specifications

Services

3-Year, 9x5 SW phone support, software updates (UV748E)
3-year, 24x7 SW phone support, software updates (UV749E)

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 Intelligent Management Center Standard Software Platform accessories

License

HP IMC Standard and Enterprise Additional 50-node E-LTU	JG749AAE
HP PCM+ to IMC Standard Software Platform Upgrade with 200-node E-LTU	JG768AAE

Software

HP IMC Intelligent Analysis Reporter Software E-LTU	JG138AAE
HP IMC Service Health Manager Software Module E-LTU	JG398AAE
HP IMC Remote Site Manager Software Module License with E-LTU	JG495AAE
HP IMC User Access Manager Software Module with 50-user E-LTU	JG752AAE
HP IMC Endpoint Admission Defense Software Module 50-user E-LTU	JG754AAE
HP IMC TACACS+ Authentication Manager Software Module with 50-node E-LTU	JG764AAE
HP IMC Virtualization Monitor Software with E-LTU	JG547AAE
HP IMC Network Traffic Analyzer Module with 5-node E-LTU	JG750AAE

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