Data sheet

HP 6600 Switch Series

Key features

- Enhanced for data center server access layer
- Front-to-back, reversible airflow
- Redundant, hot-swappable power supplies and fans
- 64K MAC address scalability
- Consistent ProVision ASIC-based switch fabric

Product overview

The HP 6600 Switch Series consists of advanced data center server edge switches. The 6600 Switch Series includes 10/100/1000BASE-T and 10GbE SFP+ 1U rackmount switches enhanced for server edge connectivity with front-to-back (reversible) airflow, redundant hot-swappable power, and redundant hot-swappable fans. The foundation for the switch series is a purpose-built, programmable ProVision ASIC that allows the most demanding networking features, such as quality of service (QoS) and security, to be implemented in a scalable yet granular fashion. With a variety of connectivity interfaces and expanded buffering, the HP 6600 Switch Series offers excellent investment protection, flexibility, and scalability, as well as ease of deployment and reduced operational expense.

Features and benefits

Software-defined networking

- **NEW OpenFlow**
  is a key technology enabling software-defined networking by allowing the separation of data (packet forwarding) and control (routing decision) paths

Quality of Service (QoS)

- **Layer 4 prioritization**
  enables prioritization based on TCP/UDP port numbers
- **Class of Service (CoS)**
  sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- **Bandwidth shaping**
  - **Port-based rate limiting**
    provides per-port ingress-/egress-enforced maximum bandwidth
  - **Classifier-based rate limiting**
    uses an access control list (ACL) to enforce maximum bandwidth for ingress traffic on each port
  - **Guaranteed minimum**
    provides per-port, per-queue egress-based guaranteed minimum bandwidth
- **Advanced classifier-based QoS**
  classifies traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a per-port or per-VLAN basis
- **Traffic prioritization**
  allows real-time traffic classification into eight priority levels mapped to eight queues

Data center optimized

- **Front-to-back airflow**
  designed to be collocated at the top of a server rack, the 6600 Switch Series supports front-to-back airflow (mechanically reversible) to support hot aisle/cold aisle configurations; the N+N fan tray is also hot-swappable, allowing easy replacement in the rack
- **Modular internal power supplies**
  support redundant, hot-swappable power supply configurations (units ship with one supply); power load is shared across dual supplies
- **Server-to-switch distributed trunking**
  supports Layer 2 LACP groups from a single server across two different switches for active-active server NIC teaming configurations
- **Power down idle ports**
  save power by powering down blocks of idle Gigabit and 10GbE ports; idle ports can be reinitialized without rebooting; available on 6600-24XG and 6600-48G-4XG models
- **Out-of-band management**
  remotely monitors and manages switch via Ethernet out-of-band management port; eliminates the need for terminal server network; available on 6600-24XG and 6600-48G-4XG models
- **Deployment/Serviceability**
  data connectivity and management ports are all front-side accessible, and power supplies and fan trays are rear-side accessible, allowing for easy maintenance and in-rack serviceability

Management

- **Remote intelligent mirroring**
  mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote HP 8200 zl, 6600, 6200 yl, 5400 zl, or 3500 Switch located anywhere on the network
- **RMON, XRMON, and sFlow v5**
  provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **Uni-Directional Link Detection (UDLD)**
  monitors a cable between two switches and shuts down the ports on both ends if the cable is broken, turning the bidirectional link into a unidirectional one; this prevents network problems such as loops
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  automated device discovery protocol provides easy mapping of network management applications
- **Management simplicity**
  provided by common networking features and CLI implementation (common across HP 8200 zl, 6600, 6200 yl, 5400 zl, and 3500 Switches)
- **Command authorization**
  leverages RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity
- **Friendly port names**
  allow assignment of descriptive names to ports
- **Multiple configuration files**
  can be stored to the flash image
- **Dual flash images**
  provide independent primary and secondary operating system files for backup while upgrading
- **NEW Comware CLI**
  - **Comware-compatible CLI**
    bridges the experience of HP Comware CLI users who are using the HP ProVision software CLI
  - **Display and fundamental Comware CLI commands**
    are embedded in the switch CLI as native commands; display output is formatted as on Comware-based switches, and fundamental commands provide a Comware-familiar initial switch setup
  - **Configuration Comware CLI commands**
    when Comware commands are entered, CLI help is elicited to formulate the correct ProVision software CLI command

Connectivity

- **Auto-MDIX**
  automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports
- **Jumbo frames**
  on Gigabit Ethernet and 10-Gigabit ports, jumbo frames allow high-performance remote backup and disaster-recovery services
- **IPv6**
  - **IPv6 host**
    enables switches to be managed in an IPv6 network
  - **Dual stack (IPv4 and IPv6)**
    transitions from IPv4 to IPv6, supporting connectivity for both protocols
  - **MLD snooping**
    forwards IPv6 multicast traffic to the appropriate interface
  - **IPv6 ACL/QoS**
    supports ACL and QoS for IPv6 network traffic
  - **IPv6 routing**
    supports static and OSPFv3 routing protocols
  - **6in4 tunneling**
    supports encapsulation of IPv6 traffic in IPv4 packets

Performance

- **High-speed, high-capacity architecture**
  based on the purpose-built ProVision ASICs to provide superior system performance and scalability
- **Selectable queue configurations**
  allows for increased performance by selecting the number of queues and associated memory buffering that best meet the requirements of the network applications

Resiliency and high availability

- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HP port trunking**
  support up to 144 trunks, each with up to eight links (ports) per trunk
- **IEEE 802.1s Multiple Spanning Tree**
  provides high link availability in multiple VLAN environments by allowing multiple spanning trees; provides legacy support for IEEE 802.1d and IEEE 802.1w
- **Virtual Router Redundancy Protocol (requires Premium License)**
  allows groups of two routers to dynamically back each other up to create highly available routed environments
- **Spares simplicity**
  is made possible through the use of common power supplies, fan trays, and transceivers
- **Distributed trunking**
  enables loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing
- **Uplink Failure Detection**
  provides active-standby network path redundancy for servers that are configured for active-standby NIC teaming

Layer 2 switching

- **HP switch meshing**
  dynamically load-balances across multiple active redundant links to increase available aggregate bandwidth
- **GARP VLAN Registration Protocol**
  allows automatic learning and dynamic assignment of VLANs
- **IEEE 802.1ad Q-in-Q (requires Premium License)**
  increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on a high-speed campus or metro network
- **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 usage; is compatible with PVST+

Layer 3 services

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

Layer 3 routing

- **Static IP routing**
  provides manually configured routing for both IPv4 and IPv6 networks
- **Routing Information Protocol (RIP)**
  provides RIPv1 and RIPv2 routing
- **OSPF (requires Premium License)**
  provides OSPFv2 for IPv4 routing and OSPFv3 for IPv6 routing
- **BGP (requires Premium License)**
  provides IPv4 Border Gateway Protocol routing that is scalable, robust, and flexible

Security

- **Source-port filtering**
  allows only specified ports to communicate with each other
- **RADIUS/TACACS+**
  eases switch management security administration by using a password authentication server

- **Secure Shell**
  encrypts all transmitted data for secure remote CLI access over IP networks
- **Port security**
  allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout**
  prevents particular configured MAC addresses from connecting to the network
- **Detection of malicious attacks**
  monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- **Secure FTP**
  allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of a switch configuration file
- **Switch management logon security**
  can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **Secure management access**
  securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **ICMP throttling**
  defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic
- **Virus throttling**
  detects traffic patterns typical of worm-type viruses and either throttles or entirely prevents the virus from spreading across the routed VLANs or bridged interfaces without requiring external appliances
- **STP BPDU port protection**
  blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **Dynamic IP lockdown**
  works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
- **DHCP protection**
  blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Dynamic ARP protection**
  blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **USB Secure Autorun (requires HP PCM+)**
  deploys, diagnoses, and updates a switch using a USB flash drive; works with a secure credential to prevent tampering
- **STP Root Guard**
  protects the root bridge from malicious attacks or configuration mistakes
- **Management Interface Wizard**
  helps secure management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB at the desired level
- **Access control lists (ACLs)**
  provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis
- **Multiple user authentication methods**
  - **Multiple IEEE 802.1X users per port**
    authenticates multiple IEEE 802.1X users per port
  - **Web-based authentication**
    authenticates from Web browser for clients that do not support IEEE 802.1X supplicant
  - **MAC-based authentication**
    client is authenticated with the RADIUS server based on client's MAC address
  - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port**
    switch port accepts up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Switch CPU protection**
  provides automatic protection against malicious network traffic trying to shut down the switch
- **Identity-driven ACL**
  enables implementation of a highly granular and flexible access security policy specific to each authenticated network user
- **Secure Sockets Layer (SSL)**
  encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Security banner**
  displays a customized security policy when users log in to the switch

Multicast support

- **IP multicast routing (requires Premium License)**
  includes PIM Sparse and Dense modes to route IP multicast traffic
- **IP multicast snooping (data-driven IGMP)**
  automatically prevents flooding of IP multicast traffic

Convergence

- **Auto VLAN configuration for voice**
  - **RADIUS VLAN**
    uses a standard RADIUS attribute and LLDP-MED to automatically configure a VLAN for IP phones
  - **CDPv2**
    uses CDPv2 to configure legacy IP phones

Warranty and support

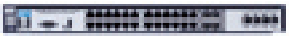
- **Lifetime warranty**
  for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)†

†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**.

- **Electronic and telephone support**
  limited electronic and telephone support is available from HP; to reach our support centers, refer to **www.hp.com/networking/contact-support**; for details on the duration of support provided with your product purchase, refer to **www.hp.com/networking/warrantysummary**
- **Software releases**
  to find software for your product, refer to **www.hp.com/networking/support**; for details on the software releases available with your product purchase, refer to **www.hp.com/networking/warrantysummary**

HP 6600 Switch Series

Specifications

			
	HP 6600-24G-4XG Switch (J9264A)	**HP 6600-24XG Switch (J9265A)**	**HP 6600-48G-4XG Switch (J9452A)**
Ports	20 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10BASE-T; IEEE 802.3u Type 100BASE-TX; IEEE 802.3ab 1000BASE-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers) 4 SFP+ 10-GbE ports; Duplex: full only 1 RS-232C DB-9 console port	24 SFP+ 10-GbE ports; Duplex: full only 1 RJ-45 serial console port 1 RJ-45 out-of-band management port	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: Auto-MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only 4 SFP+ 10-GbE ports; Duplex: full only 1 RJ-45 serial console port 1 RJ-45 out-of-band management port
Power supplies	2 power supply slots includes: 1 x J9269A (HP 6600 Switch Power Supply)	2 power supply slots includes: 1 x J9269A (HP 6600 Switch Power Supply)	2 power supply slots includes: 1 x J9269A (HP 6600 Switch Power Supply)
Fan tray	includes: 1 x J9271A 1 fan tray slot Fan tray supports N+N fans for added redundancy.	includes: 1 x J9271A 1 fan tray slot Fan tray supports N+N fans for added redundancy.	includes: 1 x J9271A 1 fan tray slot Fan tray supports N+N fans for added redundancy.
Physical characteristics			
	17.42(w) x 21.5(d) x 1.7(h) in (44.25 x 54.61 x 4.32 cm) (1U height)	17.42(w) x 25.25(d) x 1.7(h) in (44.25 x 64.14 x 4.32 cm) (1U height)	17.42(w) x 25.25(d) x 1.7(h) in (44.25 x 64.14 x 4.32 cm) (1U height)
Weight	17.2 lb (7.8 kg)	19.7 lb (8.94 kg)	23.5 lb (10.66 kg)
Memory and processor			
	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 256 MB compact flash, 256 MB DDR SDRAM; packet buffer size: 36 MB QDR SDRAM total (18 MB for 1 GbE/10 GbE ports)	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 1 GB compact flash, 256 MB DDR SDRAM; packet buffer size: 108 MB QDR SDRAM total (for all 10 GbE ports)	Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 1 GB compact flash, 256 MB DDR SDRAM; packet buffer size: 72 MB QDR SDRAM total (36 MB for 1 GbE/10 GbE ports)
Mounting	Includes hardware for 2-post telco rack or equipment cabinet; horizontal surface mounting only. The 6600 Series Rack Kit (J9469A) is required for mounting in 4-post server/networking rack.	Includes hardware for 2-post telco rack or equipment cabinet; horizontal surface mounting only. The 6600 Series Rack Kit (J9469A) is required for mounting in 4-post server/networking rack.	Includes hardware for 2-post telco rack or equipment cabinet; horizontal surface mounting only. The 6600 Series Rack Kit (J9469A) is required for mounting in 4-post server/networking rack.
Performance			
1000 Mb Latency	< 3.4 µs (FIFO 64-byte packets)		< 3.4 µs (FIFO 64-byte packets)
10 Gbps Latency	< 2.4 µs (FIFO 64-byte packets)	< 2.4 µs (FIFO 64-byte packets)	< 2.4 µs (FIFO 64-byte packets)
Throughput	up to 75.7 million pps (64-byte packets)	up to 240.2 million pps (64-byte packets)	up to 130.9 million pps (64-byte packets)
Routing/Switching capacity	101.8 Gbps	322.8 Gbps	176 Gbps
Switch fabric speed	105.6 Gbps	345.6 Gbps	176 Gbps
Routing table size	10000 entries	10000 entries	10000 entries
MAC address table size	64000 entries	64000 entries	64000 entries
Environment			
Operating temperature	41°F to 104°F (5°C to 40°C)	32°F to 104°F (0°C to 40°C)	41°F to 104°F (5°C to 40°C)
Operating relative humidity	15% to 80% @ 104°F (40°C), noncondensing	15% to 80% @ 104°F (40°C), noncondensing	15% to 80% @ 104°F (40°C), noncondensing
Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Nonoperating/Storage relative humidity	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 149°F (65°C), noncondensing	15% to 90% @ 158°F (70°C), noncondensing
Altitude	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)	up to 10,000 ft (3 km)
Acoustic	Power: 68 dB, Pressure: 59.5 dB ISO 7779, ISO 9296	Power: 72 dB, Pressure: 61.8 dB ISO 7779, ISO 9296	Power: 71.8 dB, Pressure: 63.4 dB ISO 7779, ISO 9296
Electrical characteristics			
	Achieved Miercom Certified Green Award	Achieved Miercom Certified Green Award	
Description	The switch automatically adjusts to any voltage between 100-120 and 200-240 V with either 50 or 60 Hz.	The switch automatically adjusts to any voltage between 100-120 and 200-240 V with either 50 or 60 Hz.	The switch automatically adjusts to any voltage between 100-120 and 200-240 V with either 50 or 60 Hz.
Maximum heat dissipation	697 BTU/hr (735.33 kJ/hr)	1382 BTU/hr (1458.01 kJ/hr)	890 BTU/hr (938.95 kJ/hr)
Voltage	100-120/200-240 VAC	100-120/200-240 VAC	100-120/200-240 VAC
Idle power	167.6 W	344.6 W	226 W
Maximum power rating	204.3 W	405.4 W	261 W
Frequency	50/60 Hz	50/60 Hz	50/60 Hz

HP 6600 Switch Series

Specifications (continued)

	HP 6600-24G-4XG Switch (J9264A)	HP 6600-24XG Switch (J9265A)	HP 6600-48G-4XG Switch (J9452A)
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.	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.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	CSA 22.2 No. 60950; EN 60950/IEC 60950; UL 60950	CSA 22.2 No. 60950; EN 60950/IEC 60950; UL 60950	CSA 22.2 No. 60950; EN 60950/IEC 60950; UL 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity			
EN	EN 55024, CISPR 24	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2	IEC 61000-4-2	IEC 61000-4-2
Radiated	IEC 61000-4-3	IEC 61000-4-3	IEC 61000-4-3
EFT/Burst	IEC 61000-4-4	IEC 61000-4-4	IEC 61000-4-4
Surge	IEC 61000-4-5	IEC 61000-4-5	IEC 61000-4-5
Conducted	IEC 61000-4-6	IEC 61000-4-6	IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8	IEC 61000-4-8	IEC 61000-4-8
Voltage dips and interruptions	IEC 61000-4-11	IEC 61000-4-11	IEC 61000-4-11
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Management	HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu	HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu	HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu
Notes	Supported 1G SFP transceivers are revision "B" or later (product number ends with the letter "B" or later, for example, J9142B, J8177C).		
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR889E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR890E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR891E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) 3 Yr 6 hr Call-to-Repair Onsite (UW356E)	3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR889E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR890E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR891E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) 3 Yr 6 hr Call-to-Repair Onsite (UW356E)	3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E) 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6319E) 3-year, 24x7 SW phone support, software updates (UE264E) 1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR894E) 1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR895E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E) 4-year, 24x7 SW phone support, software updates (UR887E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E) 5-year, 24x7 SW phone support, software updates (UR891E) 3 Yr 6 hr Call-to-Repair Onsite (UW365E) 4 Yr 6 hr Call-to-Repair Onsite (UW366E)

HP 6600 Switch Series

Specifications (continued)

	HP 6600-24G-4XG Switch (J9264A)	HP 6600-24XG Switch (J9265A)	HP 6600-48G-4XG Switch (J9452A)
	4 Yr 6 hr Call-to-Repair Onsite (UW357E)	4 Yr 6 hr Call-to-Repair Onsite (UW357E)	5 Yr 6 hr Call-to-Repair Onsite (UW367E)
	5 Yr 6 hr Call-to-Repair Onsite (UW358E)	5 Yr 6 hr Call-to-Repair Onsite (UW358E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR898E)
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR893E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR893E)	1-year, 24x7 software phone support, software updates (HR897E)
	1-year, 24x7 software phone support, software updates (HR892E)	1-year, 24x7 software phone support, software updates (HR892E)	1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (HR896E)
	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS610E)	1-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS610E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS618E)
	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS611E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS611E)	1-year, 24x7 software phone support, software updates + 4 hour hardware exchange (HS619E)
	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS612E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS612E)	3-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS620E)
	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS613E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS613E)	3-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS621E)
	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS614E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS614E)	4-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS622E)
	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS615E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS615E)	4-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS623E)
	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS616E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS616E)	5-year, 24x7 software phone support, software updates + Next Business Day Hardware Exchange (HS624E)
	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS617E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS617E)	5-year, 24x7 software phone support, software updates + 4 hour Hardware Exchange (HS625E)
	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.	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.	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 6600 Switch Series

Specifications (continued)

	HP 6600-24G-4XG Switch (J9264A)	HP 6600-24XG Switch (J9265A)	HP 6600-48G-4XG Switch (J9452A)
Standards and protocols (applies to all products in series)	**BGP** RFC 1997 BGP Communities Attribute RFC 2918 Route Refresh Capability RFC 4271 A Border Gateway Protocol 4 (BGP-4) RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP) RFC 5492 Capabilities Advertisement with BGP-4 **Device management** RFC 1591 DNS (client) HTML and telnet management **General protocols** IEEE 802.1ad Q-in-Q IEEE 802.1AX-2008 Link Aggregation IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP RFC 4675 RADIUS VLAN & Priority UDLD (Uni-directional Link Detection) **IP multicast** RFC 3376 IGMPv3 (host joins only) RFC 3973 PIM Dense Mode RFC 4601 PIM Sparse Mode	**IPv6** RFC 1981 IPv6 Path MTU Discovery RFC 2375 IPv6 Multicast Address Assignments RFC 2460 IPv6 Specification RFC 2464 Transmission of IPv6 over Ethernet Networks RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client and relay) RFC 3484 Default Address Selection for IPv6 RFC 3587 IPv6 Global Unicast Address Format RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 for IPv6 RFC 4022 MIB for TCP RFC 4087 IP Tunnel MIB RFC 4113 MIB for UDP RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4291 IP Version 6 Addressing Architecture RFC 4293 MIB for IP RFC 4294 IPv6 Node Requirements RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration RFC 5095 Deprecation of Type 0 Routing Headers in IPv6 RFC 5340 OSPFv3 for IPv6 RFC 5453 Reserved IPv6 Interface Identifiers RFC 5519 Multicast Group Membership Discovery MIB (MLDv2 only) RFC 5722 Handling of Overlapping IPv6 Fragments **MIBs** IEEE 802.1ap (MSTP and STP MIB's only) RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB	RFC 2737 Entity MIB (Version 2) RFC 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB RFC 2933 IGMP MIB **Network management** IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON **OSPF** RFC 2328 OSPFv2 RFC 3101 OSPF NSSA RFC 5340 OSPFv3 for IPv6 **QoS/CoS** RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) **Security** IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting RFC 3579 RADIUS Support For Extensible Authentication Protocol (EAP) Secure Sockets Layer (SSL) SSHv2 Secure Shell

HP 6600 Switch Series accessories

Modules

HP 6600 Switch Fan Tray (J9271A)

Transceivers

HP X111 100M SFP LC FX Transceiver (J9054C)
HP X112 100M SFP LC BX-D Transceiver (J9099B)
HP X112 100M SFP LC BX-U Transceiver (J9100B)
HP X132 10G SFP+ LC SR Transceiver (J9150A)
HP X132 10G SFP+ LC LR Transceiver (J9151A)
HP X132 10G SFP+ LC LRM Transceiver (J9152A)
HP X121 1G SFP LC LH Transceiver (J4860C)
HP X121 1G SFP LC SX Transceiver (J4858C)
HP X121 1G SFP LC LX Transceiver (J4859C)
HP X122 1G SFP LC BX-D Transceiver (J9142B)
HP X122 1G SFP LC BX-U Transceiver (J9143B)
HP X132 10G SFP+ LC ER Transceiver (J9153A)

Cables

HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable (J9281B)
HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (J9283B)
HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable (J9285B)
HP X244 10G XFP to SFP+ 1m Direct Attach Copper Cable (J9300A)
HP X244 10G XFP to SFP+ 3m Direct Attach Copper Cable (J9301A)
HP X244 10G XFP to SFP+ 5m Direct Attach Copper Cable (J9302A)
HP 0.5 m Multimode OM3 LC/LC Optical Cable (AJ833A)
HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)
HP 2 m Multimode OM3 LC/LC Optical Cable (AJ835A)
HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)
HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)
HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)
HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)
HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable (BK837A)
HP 1 m PremierFlex OM3+ LC/LC Optical Cable (BK838A)
HP 2 m PremierFlex OM3+ LC/LC Optical Cable (BK839A)
HP 5 m PremierFlex OM3+ LC/LC Optical Cable (BK840A)
HP 15 m PremierFlex OM3+ LC/LC Optical Cable (BK841A)
HP 30 m PremierFlex OM3+ LC/LC Optical Cable (BK842A)
HP 50 m PremierFlex OM3+ LC/LC Optical Cable (BK843A)
HP BLc SFP+ 0.5m 10GbE Copper Cable (487649-B21)
HP BLc SFP+ 1m 10GbE Copper Cable (487652-B21)
HP BLc SFP+ 3m 10GbE Copper Cable (487655-B21)
HP BLc SFP+ 5m 10GbE Copper Cable (537963-B21)
HP BLc SFP+ 7m 10GbE Copper Cable (487658-B21)
HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable (J9286B)
HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable (J9287B)

Power Supply

HP 6600 Switch Power Supply (J9269A)

Mounting Kit

HP 6600 Series Switch Rack Kit (J9469A)
HP 6600-24XG, 48G and 48G-4XG Switch Air Plenum Kit (J9480A)
HP 6600-24G and 24G-4XG Switch Air Plenum Kit (J9481A)

License

HP 6600 Switch Premium License (J9305A)

Products within this series have achieved sufficient scores in each of the rated criteria to achieve the Miercom Certified Green distinction Award. See the Specifications section of this series for more information.

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