HP 5820 Switch Series

Key features

- For enterprise edge, or distribution/data center
- Up to 24 ports of 10GbE per unit/194 per stack
- Flex chassis—modular resiliency
- Cut-through switching for very low latency
- Hot-swappable I/O, power supplies, and fans

Product overview

The HP 5820 Switch Series supports advanced features that deliver a unique combination of unmatched 10 Gigabit Ethernet; Fibre Channel over Ethernet (FCoE) connectivity; high-availability architecture; full Layer 2/3 dual-stack IPv4/IPv6; and line-rate, low-latency performance on all ports. Extensible embedded application capabilities enable these switches to integrate services into the network, consolidating devices and appliances to simplify deployment and reduce power consumption and rack space. Extremely versatile, the switches can be used in high-performance, high-density building or department cores as part of a consolidated network; for data center top-of-rack server access; or as high-performance Layer 3, 10GbE aggregation switches in campus and data center networks.

Features and benefits

Quality of Service (QoS)

- **Powerful QoS feature**
  creates traffic classes based on access control lists (ACLs), IEEE 802.1p precedence, IP, and DSCP or Type of Service (ToS) precedence; supports filter, redirect, mirror, or remark; supports the following congestion actions: strict priority (SP) queuing, weighted round robin (WRR), weighted fair queuing (WFQ), weighted random early discard (WRED), weighted deficit round robin (WDRR), and SP+WDRR

- **Integrated network services**
  with support for open application architecture (OAA) modules, extends and integrates application capability into the network

- **Ring Resiliency Protection Protocol (RRPP)**
  provides fast recovery for ring Ethernet-based topology; helps ensure consistent application performance for applications such as VoIP

Management

- **Remote configuration and management**
  is available through a secure Web browser or a CLI

- **IEEE 802.1ab LLDP discovery**
  advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications

- **USB support**

  - **File copy**
    allows users to copy switch files to and from a USB flash drive

- **DHCP options**
  provides server (RFC 2131), client, snooping, and relay options

- **SNMPv1, v2c, and v3**
  facilitate centralized discovery, monitoring, and secure management of networking devices

- **sFlow**
  provides scalable ASIC-based network monitoring and accounting; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes

- **Network Time Protocol (NTP)**
  synchronizes timekeeping among distributed time servers and clients; keeps consistent timekeeping among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time

Connectivity

- **High-density port connectivity**
  194 10GbE ports with a 40 Gbps resilient backplane

- **Data center I/O consolidation**
  the 5820-14XG FCoE module supports two 4x8/4/2 Gbps FCoE modules (up to eight Fibre Channel ports total) to reduce cost and complexity while boosting network performance

- **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 Ethernet ports, jumbo frames allow high-performance remote backup and disaster-recovery services

- **IPv6 native support**

  - **IPv6 host**
    enables switches to be managed and deployed at the IPv6 network's edge

  - **Dual stack (IPv4/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, preventing traffic flooding

  - **IPv6 routing**
    supports IPv6 static routes and IPv6 versions of RIP, OSPF, IS-IS, and Border Gateway Protocol (BGP) routing protocols

Performance

- **Hardware-based wire-speed access control lists (ACLs)**
  feature-rich ACL implementation (TCAM-based) helps provide high levels of security and ease of administration without impacting network performance

- **Unique versatile architecture**
  supports the best of both fixed-port and modular configurations

- **Cut-through switching**
  delivers wire-speed, line-rate performance on all ports, as well as cut-through switching for low latency

Resiliency and high availability

- **Data center–optimized design**
  the HP 5820AF-24XG Switch (JG219A) supports front-to-back/back-to-front airflow for hot/cold aisles, rear rack mounts, and redundant hot-swappable AC or DC power and fans

Manageability

- **Full-featured console**
  provides complete control of the switch with a familiar CLI

- **Web interface**
  allows configuration of the switch from any Web browser on the network

- **RMON and sFlow**
  provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events

- **Multiple configuration files**
  allow multiple configuration files to be stored to a flash image

- **Troubleshooting**

  - **Ingress and egress port monitoring**
    enable network problem solving

  - **Traceroute and ping**
    enable testing of network connectivity

  - **Virtual cable tests**
    provide visibility to cable problems

Layer 2 switching

- **32K MAC addresses**
  provide access to many Layer 2 devices

- **4,094 port-based VLANs**
  provide security between workgroups

- **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

- **Gigabit Ethernet port aggregation**
  allows grouping of ports to increase overall data throughput to a remote device

- **10GbE port aggregation**
  allows grouping of ports to increase overall data throughput to a remote device

- **Spanning Tree/MSTP, RSTP, and STP Root Guard**
  prevent network loops

- **sFlow**
  allows traffic sampling

- **GVRP VLAN Registration Protocol**
  allows automatic learning and dynamic assignment of VLANs

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

- **Dynamic Host Configuration Protocol (DHCP)**
  simplifies the management of large IP networks and supports client and server; DHCP Relay enables DHCP operation across subnets

Layer 3 routing

- **Layer 3 IPv4 routing**
  provides routing of IPv4 at media speed; supports static routes, RIP and RIPv2, OSPF, IS-IS, and BGP

- **Routing Information Protocol (RIP) and RIPng support**
  provides complete support of RIP for both IPv4 and IPv6

- **OSPF and OSPFv3 support**
  provides complete support of OSPF for both IPv4 and IPv6

- **IS-IS and IS-ISv6 support**
  provides complete support of IS-IS for both IPv4 and IPv6

- **Layer 3 IPv6 routing**
  provides routing of IPv6 at media speed; supports static routes, RIPng, OSPFv3, IS-ISv6, and BGP4+

- **Bidirectional Forwarding Detection (BFD)**
  enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, MPLS, and IRF

- **Virtual Router Redundancy Protocol (VRRP) and VRRP Extended**
  allow quick failover of router ports

- **Policy-based routing**
  makes routing decisions based on policies set by the network administrator

- **IGMPv1, v2, and v3**
  allow individual hosts to be registered on a particular VLAN

- **PIM-SSM, PIM-DM, and PIM-SM (for IPv4 and IPv6)**
  support IP Multicast address management and inhibition of DoS attacks

- **Equal-Cost Multipath (ECMP)**
  enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth

Security

- **Defense-in-depth security**
  provides integrated and distributed security enforcement that can be managed from a central location, such as the HP Intelligent Management Center (IMC)

- **Advanced processor queuing mechanism**
  helps prevent denial-of-service (DoS) attacks, while DHCP snooping helps ensure that devices can only receive an IP address from a legitimate DHCP server on the network

- **RADIUS/HWTACACS**
  eases switch management security administration by using a password authentication server

- **Secure Shell (SSHv2)**
  encrypts all transmitted data for secure, remote CLI access over IP networks

- **IEEE 802.1X-based dynamic delivery of QoS, ACLs, and VLANs**
  allows complete control over user network access

- **Guest VLAN**
  similar to IEEE 802.1X, it provides a browser-based environment to authenticated clients

- **Port isolation**
  secures and adds privacy, and prevents malicious attackers from obtaining user information

- **Port security**
  allows access only to specified MAC addresses, which can be learned or specified by the administrator

- **MAC-based authentication**
  allows or denies access to the switch based on a client MAC address

- **IP Source Guard**
  helps prevent IP spoofing attacks

- **HTTPS management**
  provides secure Web management

- **URPF**
  limits malicious traffic on a network

- **Multi-Customer Edge (MCE)-Multicast Virtual Routing and Forwarding (MVRF)**
  provide MPLS Edge router support

- **Public Key Infrastructure (PKI)**
  is used to control access

Convergence

- **Voice VLAN**
  automatically assigns VLAN and priority for IP phones, simplifying network configuration and maintenance

- **LLDP-MED**
  is a standard extension that automatically configures network devices, including LLDP-capable IP phones

- **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 (DM), Sparse Mode (SM), and Source-Specific Mode (SSM)

Monitor and diagnostics

- **Port mirroring**
  enables traffic on a port to be simultaneously sent to a network analyzer for monitoring

- **OAM (IEEE 802.3ah)**
  operations, administration and maintenance (OAM) management capability detects data link layer problems that occurred in the "last mile"; monitors the status of the link between the two devices

- **CFD (IEEE 802.1ag)**
  connectivity fault detection (CFD) provides a Layer 2 link OAM mechanism used for link connectivity detection and fault locating

Additional information

- **Intelligent Resilient Framework (IRF)**

  – Creates virtual resilient switching fabrics, where two or more switches perform as a single Layer 2 switch and Layer 3 router

  – Does not require switches to be co-located and allows them to be part of a disaster-recovery system

  – Allows servers or switches to be attached using standard LACP for automatic load balancing and high availability

  – Simplifies network operation by eliminating the complexity of Spanning Tree Protocol, ECMP, or VRRP

- **OAA modules**
  support wireless network management and high-performance security applications; leverage network infrastructure investment

- **Green IT and power**
  use the latest advances in silicon development, shut off unused ports, and use variable-speed fans to improve energy efficiency

- **High scalability with IRF**
  HP Intelligent Resilient Framework (IRF) technology simplifies the architecture of server access networks; up to nine HP 5820/5820AF stackable switches can be combined to deliver unmatched scalability of virtualized access layer switches and flatter, two-tier FlexFabric networks using IRF, which reduces cost and complexity

Warranty and support

- **1-year warranty**
  with advance replacement and 10-calendar-day delivery (available in most countries)

- **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 5820 Switch Series

Specifications

	HP 5820-14XG-SFP+ Switch with 2 Slots (JC106A)	HP 5820-24XG-SFP+ Switch (JC102A)	HP 5820AF-24XG Switch (JG219A)
Ports	14 SFP+ 10-GbE ports; Duplex: full only	24 SFP+ 10-GbE ports; Duplex: full only	24 fixed 1000/10000 SFP+ ports
	2 extended module slots	4 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)	2 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
	1 open module slot		
	4 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)	1 RJ-45 serial console port	1 RJ-45 serial console port
	1 RJ-45 serial console port	Supports a maximum of 24 SFP+ ports plus 4 autosensing 10/100/1000 ports	1 RJ-45 out-of-band management port
	Supports a maximum of 14 SFP+ ports plus 8 8/4/2 Gbps Fibre Channel SFP+ ports, with optional module		1 USB 2.0
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)	2 power supply slots 1 minimum power supply required (ordered separately)	2 power supply slots 1 minimum power supply required (ordered separately)
Fan tray	includes: 1 x JC096A 1 fan tray slot Base product includes fan tray.	includes: 1 x JC098A 1 fan tray slot Base product includes fan tray.	2 fan tray slots The customer must order fan trays, as fan trays are not included with the switch. This system requires two same-direction airflow fan trays to function properly. The system should not be operated with only one fan tray for more than 24 hours. The system should not be operated without a fan tray more than two minutes. The system should not be operated outside of the temperature range of 32°F (0°C) to 113°F (45°C). Failure to comply with these operating requirements may void the product warranty.
Physical characteristics	17.32(w) x 18.39(d) x 3.39(h) in (43.99 x 46.7 x 8.61 cm) (2U height)	17.32(w) x 16.81(d) x 1.73(h) in (44.0 x 42.7 x 4.4 cm) (1U height)	25.98(w) x 17.32(d) x 1.72(h) in (65.99 x 43.99 x 4.37 cm) (1U height)
Weight	33.29 lb (15.1 kg)	18.74 lb (8.5 kg)	22.05 lb (10 kg), Fully loaded
Memory and processor	1024 MB SDRAM, 512 MB flash; packet buffer size: 2 MB	1024 MB SDRAM, 512 MB flash; packet buffer size: 2 MB	1024 MB flash, 512 MB SDRAM; packet buffer size: 2 MB
Performance			
Latency	2.02 µs (Cut Through), 2.02 µs (Store and Forward) (64-byte packets)	2.02 µs (Cut Through), 2.02 µs (Store and Forward) (64-byte packets)	3 µs (64-byte packets)
Throughput	up to 363 million pps (64-byte packets)	up to 363 million pps (64-byte packets)	360 million pps
Routing/Switching capacity	488 Gbps	488 Gbps	484 Gbps
Routing table size	12000 entries	12000 entries	12000 entries
MAC address table size	32000 entries	32000 entries	32000 entries
Environment			
Operating temperature	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)	32°F to 113°F (0°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Acoustic	Low-speed fan: 44.3 dB, High-speed fan: 54.1 dB	Low-speed fan: 48.4 dB, High-speed fan: 59.7 dB	Low-speed fan: 60.1 dB, High-speed fan: 69.9 dB
Electrical characteristics			
Maximum heat dissipation	836 BTU/hr (881.98 kJ/hr)	631 BTU/hr (665.71 kJ/hr)	607 BTU/hr (640.39 kJ/hr)
Voltage	100-120/200-240 VAC	100-120/200-240 VAC	100-120/200-240 VAC
DC voltage	300 W DC: −48 VDC to −60 VDC	300 W DC: −48 VDC to −60 VDC	650W DC: -36 VDC to -72 VDC
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; ROHS Compliance
Emissions	VCCI Class A; EN 55022 Class A; ICES-003 Class A; ANSI C63.4 2003; AS/NZS CISPR22 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	VCCI Class A; EN 55022 Class A; ICES-003 Class A; ANSI C63.4 2003; AS/NZS CISPR22 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	VCCI Class A; EN 55022 Class A; ICES-003 Class A; ANSI C63.4 2003; AS/NZS CISPR22 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	ETSI EN 300 386 V1.3.3	ETSI EN 300 386 V1.3.3

HP 5820 Switch Series

Specifications (continued)

	HP 5820-14XG-SFP+ Switch with 2 Slots (JC106A)	HP 5820-24XG-SFP+ Switch (JC102A)	HP 5820AF-24XG Switch (JG219A)
EN	EN 55024:1998+ A1:2001 + A2:2003	EN 55024:1998+ A1:2001 + A2:2003	EN 55024:1998+ A1:2001 + A2:2003
ESD	EN 61000-4-2; IEC 61000-4-2	EN 61000-4-2; IEC 61000-4-2	EN 61000-4-2; IEC 61000-4-2
Radiated	EN 61000-4-3; IEC 61000-4-3	EN 61000-4-3; IEC 61000-4-3	EN 61000-4-3; IEC 61000-4-3
EFT/Burst	EN 61000-4-4; IEC 61000-4-4	EN 61000-4-4; IEC 61000-4-4	EN 61000-4-4; IEC 61000-4-4
Surge	EN 61000-4-5; IEC 61000-4-5	EN 61000-4-5; IEC 61000-4-5	EN 61000-4-5; IEC 61000-4-5
Conducted	EN 61000-4-6; IEC 61000-4-6	EN 61000-4-6; IEC 61000-4-6	EN 61000-4-6; IEC 61000-4-6
Power frequency magnetic field	IEC 61000-4-8; EN 61000-4-8	IEC 61000-4-8; EN 61000-4-8	IEC 61000-4-8; EN 61000-4-8
Voltage dips and interruptions	EN 61000-4-11; IEC 61000-4-11	EN 61000-4-11; IEC 61000-4-11	EN 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	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; HTTPS; RMON1; FTP	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; HTTPS; RMON1; FTP	IMC - Intelligent Management Center; command-line interface; Web browser; SNMP Manager; Telnet; HTTPS; RMON1; FTP
Notes	The customer must order a power supply, as the device does not come with a PSU. At least one JC087A or JC090A is required.	The customer must order a power supply, as the device does not come with a PSU. At least one JC087A or JC090A is required.	The customer must order power supply, as the device does not come with a PSU. At least one JC680A or JC681A is required.
Services	3-year, parts only, global next-day advance exchange (UY832E)	3-year, parts only, global next-day advance exchange (UY832E)	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.
	3-year, 4-hour onsite, 13x5 coverage for hardware (UV894E)	3-year, 4-hour onsite, 13x5 coverage for hardware (UV894E)	
	3-year, 4-hour onsite, 24x7 coverage for hardware (UV897E)	3-year, 4-hour onsite, 24x7 coverage for hardware (UV897E)	
	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV900E)	3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (UV900E)	
	3-year, 24x7 SW phone support, software updates (UV903E)	3-year, 24x7 SW phone support, software updates (UV903E)	
	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR559E)	1-year, post-warranty, 4-hour onsite, 13x5 coverage for hardware (HR559E)	
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR560E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware (HR560E)	
	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR561E)	1-year, post-warranty, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (HR561E)	
	Installation with minimum configuration, system-based pricing (UW451E)	Installation with minimum configuration, system-based pricing (UW451E)	
	4-year, 4-hour onsite, 13x5 coverage for hardware (UV895E)	4-year, 4-hour onsite, 13x5 coverage for hardware (UV895E)	
	4-year, 4-hour onsite, 24x7 coverage for hardware (UV898E)	4-year, 4-hour onsite, 24x7 coverage for hardware (UV898E)	
	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV901E)	4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV901E)	
	4-year, 24x7 SW phone support, software updates (UV904E)	4-year, 24x7 SW phone support, software updates (UV904E)	
	5-year, 4-hour onsite, 13x5 coverage for hardware (UV896E)	5-year, 4-hour onsite, 13x5 coverage for hardware (UV896E)	
	5-year, 4-hour onsite, 24x7 coverage for hardware (UV899E)	5-year, 4-hour onsite, 24x7 coverage for hardware (UV899E)	
	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV902E)	5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UV902E)	
	5-year, 24x7 SW phone support, software updates (UV905E)	5-year, 24x7 SW phone support, software updates (UV905E)	
	3 Yr 6 hr Call-to-Repair Onsite (UW972E)	3 Yr 6 hr Call-to-Repair Onsite (UW972E)	
	4 Yr 6 hr Call-to-Repair Onsite (UW973E)	4 Yr 6 hr Call-to-Repair Onsite (UW973E)	
	5 Yr 6 hr Call-to-Repair Onsite (UW974E)	5 Yr 6 hr Call-to-Repair Onsite (UW974E)	
	1-year, 6 hour Call-To-Repair Onsite for hardware (HR563E)	1-year, 6 hour Call-To-Repair Onsite for hardware (HR563E)	
	1-year, 24x7 software phone support, software updates (HR562E)	1-year, 24x7 software phone support, software updates (HR562E)	

Specifications (continued)

	HP 5820-14XG-SFP+ Switch with 2 Slots (JC106A)	HP 5820-24XG-SFP+ Switch (JC102A)	HP 5820AF-24XG Switch (JG219A)
	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.	
Standards and protocols (applies to all products in series)	**General protocols** IEEE 802.1ag Service Layer OAM IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s (MSTP) 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 802.3ae 10-Gigabit Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 792 ICMP RFC 793 TCP RFC 826 ARP RFC 854 TELNET RFC 925 Multi-LAN Address Resolution RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2131 DHCP RFC 2453 RIPv2 RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP RFC 4675 RADIUS VLAN & Priority RFC3323 A Privacy Mechanism for the Session Initiation Protocol (SIP) 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP) **IP multicast** RFC 2934 Protocol Independent Multicast MIB for IPv4 RFC 3376 IGMPv3 (host joins only) RFC 3618 Multicast Source Discovery Protocol (MSDP) RFC 3973 Draft 2 PIM Dense Mode RFC 4601 Draft 10 PIM Sparse Mode **IPv6** RFC 2080 RIPng for IPv6 RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2740 OSPFv3 for IPv6	RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3162 RADIUS and IPv6 RFC 3315 DHCPv6 (client and relay) RFC 3315 DHCPv6 (client only) RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP 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** IEEE8021-PAE-MIB IEEE8023-LAG-MIB RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1657 BGP-4 MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2011 SNMPv2 MIB for IP RFC 2013 SNMPv2 MIB for UDP RFC 2233 Interface MIB RFC 2273 SNMP-NOTIFICATION-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 RFC 2573 SNMP-Notification MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2688 MAU-MIB RFC 2787 VRRP MIB RFC 2819 RMON MIB RFC 2925 Ping MIB RFC 3414 SNMP-User based-SM MIB	RFC 3415 SNMP-View based-ACM MIB RFC 3418 MIB for SNMPv3 RFC 3621 Power Ethernet MIB RFC 3826 AES for SNMP's USM MIB RFC 4133 Entity MIB (Version 3) LLDP-EXT-DOT1-MIB LLDP-EXT-DOT3-MIB LLDP-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 **OSPF** RFC 2328 OSPFv2 RFC 3101 OSPF NSSA **Security** IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv2 Secure Shell

HP 5820 Switch Series accessories

Transceivers

HP X124 1G SFP LC SX Transceiver (JD493A)

HP X124 1G SFP LC LX Transceiver (JD494A)

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 X130 10G SFP+ LC SR Transceiver (JD092B)

HP X130 10G SFP+ LC LRM Transceiver (JD093B)

HP X130 10G SFP+ LC LR Transceiver (JD094B)

HP X130 10G SFP+ LC ER 40km Transceiver (JG234A)

HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C)

HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C)

HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C)

HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable (JG081C)

HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable (JC784C)

Cables

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)

Power Supply

HP 5800 300W AC Power Supply (JC087A)

HP 5800 300W DC Power Supply (JC090A)

HP RPS1600 Redundant Power System (JG136A)

HP RPS1600 1600W AC Power Supply (JG137A)

Appliance

HP 5820 VPN Firewall Module (JD255A)

HP 5820-14XG-SFP+ Switch with 2 Slots (JC106A)

HP 5820 4-port 8/4/2 Gbps FCoE SFP+ Module (JC530A)

HP 5800 4-port 10GbE SFP+ Module (JC091A)

HP 5800 2-port 10GbE SFP+ Module (JC092B)

HP 5800 Access Controller Module for 64-256 Access Points (JD441A)

HP 5800 2RU Spare Fan Assembly (JC096A)

HP 5820 VPN Firewall Module (JD255A)

HP 5820-24XG-SFP+ Switch (JC102A)

HP 5800 1RU Spare Fan Assembly (JC098A)

HP 5820AF-24XG Switch (JG219A)

HP 58x0AF 650W AC Power Supply (JC680A)

HP 58x0AF 650W DC Power Supply (JC681A)

HP 58x0AF Back (power side) to Front (port side) Airflow Fan Tray (JC682A)

HP 58x0AF Front (port side) to Back (power side) Airflow Fan Tray (JC683A)

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