Models

HP A5820X-14XG-SFP+ Switch with 2 Interface Slots and 1 OAA Slot	JC106A
HP A5820X-24XG-SFP+ Switch	JC102A

Key features

- For enterprise core, distribution, data center
- Up to 24 ports 10 GbE 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 A5820 Switch Series features advanced flex-chassis switches 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/v6, 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, 10-GbE 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, 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; ensures consistent application performance for applications such as VoIP

Management

- Remote configuration and management: is available through a secure Web browser or a command-line interface (CLI)
- IEEE 802.1ab LLDP discovery: advertises and receives management information from adjacent devices on a network
- USB support:
  - File copy: allows users to copy switch files to and from a USB flash drive
- DHCP options: server (RFC 2131), client, snooping, and relay
- 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

Overview

Connectivity

- High-density port connectivity: 194 10-GbE ports with a 40 Gbps resilient backplane
- Data center I/O consolidation: the A5820-14XG FCoE module supports two 4x8/4/2 Gbps FCoE modules (up to eight FC 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 and 10-Gigabit ports, 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, Border Gateway Protocol (BGP) routing protocols

Performance

- Hardware-based wire-speed access control lists (ACLs): feature-rich ACL implementation (TCAM based) helps ensure high levels of security and ease of administration without impacting network performance
- Unique Flex Chassis Architecture: supports the best of both fixed chassis and modular configurations
- Cut-through switching: delivers wire-speed, line-rate performance on all ports, as well as cut-through switching for low latency

Manageability

- Full-featured console: provides complete control of the switch with a familiar command-line interface (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 flash image
- Troubleshooting:
  - Ingress and egress port monitoring enable network problem solving
  - Tracert and Ping enable testing of network connectivity
  - Virtual Cable Tests provide visibility to cable problems

Layer 2 switching

- GARP VLAN Registration Protocol (GVRP): allows automatic learning and dynamic assignment of VLANs
- 32K MAC addresses: provide access to many Layer 2 devices
- 4094 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
- 10 GbE 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 • IPFIX/sFlow: allows traffic sampling

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

Overview

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 command-line interface (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 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 v1, 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 (802.3ah): detects data link layer problems that occurred in the "last mile"; monitors the status of the link between the two devices
- CFD (802.1ag): connectivity fault detection (CFD) provides a Layer 2 link OAM (operations, administration, and maintenance) mechanism used for link connectivity detection and fault locating

Additional information

Overview

- 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
  - 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
  - Simplifies network operation by eliminating the complexity of Spanning Tree, 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 power efficiency

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; refer to: www.hp.com/networking/warranty for details on the support provided and the period during which support is available
- Software releases: refer to: www.hp.com/networking/warranty for details on the software releases provided and the period during which software releases are available for your product(s)

HP A5820X-14XG-SFP+ Switch with 2 Interface Slots and 1 OAA Slot (JC106A)

Ports	14 SFP+ 10-GbE ports; Duplex: full only	
	2 extended module slots	
	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	
	Supports a maximum of 14 SFP+ ports plus 8 8/4/2 Gbps Fibre Channel SFP+ ports, with optional module	
Power supplies	2 power-supply slots	
	1 minimum power-supplies required (ordered separately)	
Fan tray	includes: 1 x JC096A	
	1 fan tray slot	
	Base product includes fan tray	
Physical characteristics	**Dimensions**	18.39(d) x 17.32(w) x 3.39(h) in. (46.7 x 43.99 x 8.61 cm) (2U height)
	Weight	33.29 lb. (15.1 kg)
Memory and processor	512 MB SDRAM, 512 MB flash; packet buffer size: 2 MB	
Performance	**Throughput**	up to 363 million pps (64-byte packets)
	Routing/Switching capacity	488 Gbps
	Routing table size	12000 entries
	MAC address table size	32000 entries
Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 90%, noncondensing
Electrical characteristics	**Maximum heat dissipation**	836 BTU/hr (881.98 kJ/hr)
	Voltage	100-120/200-240 VAC
	Frequency	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	
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	
Immunity	**Generic**	ETSI EN 300 386 V1.3.3
	EN	EN 55024:1998+ A1:2001 + A2:2003
	ESD	EN 61000-4-2; IEC 61000-4-2
	Radiated	EN 61000-4-3; IEC 61000-4-3
	EFT/Burst	EN 61000-4-4; IEC 61000-4-4
	Surge	EN 61000-4-5; IEC 61000-4-5
	Conducted	EN 61000-4-6; IEC 61000-4-6

	Power frequency magnetic field	IEC 61000-4-8; EN 61000-4-8
	Voltage dips and interruptions	EN 61000-4-11; IEC 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; SNMP Manager; Telnet; HTTPS; RMON1; FTP

Notes

Customer must order a power supply, as the device does not come with a PSU. At least one JC087A or JC090A is required.

Services

3-year, parts only, global next-day advance exchange (UY832E)
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, 24x7 software phone support (UV900E)
3-year, 24x7 SW phone support, software updates (UV903E)
Installation with minimum configuration, system-based pricing (UW451E)
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, 24x7 software phone (UV901E)
4-year, 24x7 SW phone support, software updates (UV904E)
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, 24x7 software phone (UV902E)
5-year, 24x7 SW phone support, software updates (UV905E)
3 Yr 6 hr Call-to-Repair Onsite (UW972E)
4 Yr 6 hr Call-to-Repair Onsite (UW973E)
5 Yr 6 hr Call-to-Repair Onsite (UW974E)

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 802.1X PAE
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 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 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
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 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
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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

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	1 RJ-45 serial console port	
	Supports a maximum of 24 SFP+ ports plus 4 autosensing 10/100/1000 ports	
Power supplies	2 power-supply slots	
	1 minimum power-supplies required (ordered separately)	
Fan tray	includes: 1 x JC096A	
	1 fan tray slot	
	Base product includes fan tray	
Physical characteristics	Dimensions	16.81(d) x 17.32(w) x 1.73(h) in. (42.7 x 44.0 x 4.4 cm) (1U height)
	Weight	18.74 lb. (8.5 kg)
Memory and processor	512 MB SDRAM, 512 MB flash; packet buffer size: 2 MB	
Performance	Throughput	up to 363 million pps (64-byte packets)
	Routing/Switching capacity	488 Gbps
	Routing table size	12000 entries
	MAC address table size	32000 entries
Environment	Operating temperature	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 90%, noncondensing
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	Voltage	100-120/200-240 VAC
	Frequency	50/60 Hz
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OSPF
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RFC 2866 RADIUS Accounting
Secure Sockets Layer (SSL)
SSHv2 Secure Shell

Accessories

HP A5820 Switch Series accessories	**Modules**	
	HP A5820X/A5800 4-port 10-GbE SFP+ Module	JC091A
	HP A5820X/A5800 2-port 10-GbE SFP+ Module	JC092B
	Transceivers	
	HP X124 1G SFP LC LH40 1310nm Transceiver	JD061A
	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 X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X130 SFP+ LC SR Transceiver	JD092B
	HP X130 SFP+ LC LRM Transceiver	JD093B
	HP X130 SFP+ LC LR Transceiver	JD094B
	HP X240 SFP+ SFP+ 0.65 m Direct Attach Cable	JD095B
	HP X240 SFP+ SFP+ 1.2 m Direct Attach Cable	JD096B
	HP X240 SFP+ SFP+ 3 m Direct Attach Cable	JD097B
	Cables	
	NEW HP 0.5 m PremierFlex OM3+ LC/LC Optical Cable	BK837A
	NEW HP 1 m PremierFlex OM3+ LC/LC Optical Cable	BK838A
	NEW HP 2 m PremierFlex OM3+ LC/LC Optical Cable	BK839A
	NEW HP 5 m PremierFlex OM3+ LC/LC Optical Cable	BK840A
	NEW HP 15 m PremierFlex OM3+ LC/LC Optical Cable	BK841A
	NEW HP 30 m PremierFlex OM3+ LC/LC Optical Cable	BK842A
	NEW HP 50 m PremierFlex OM3+ LC/LC Optical Cable	BK843A
	Power Supply	
	HP A5820/A5800 300W AC Power Supply	JC087A
	HP A5820/A5800 300W DC Power Supply	JC090A
	Fan Tray	
	HP A5800 2RU Spare Fan Assembly	JC096A
	HP A5800 1RU Spare Fan Assembly for A5800-24G-SFP Switch with 1 Interface Slot	JC098A
	License	
	HP A-WX5000 32 AP License Upgrade	JD463A
	WLAN	
	HP A5800 Access Controller OAA Module	JD441A
	HP A5820X-14XG-SFP+ Switch with 2 Interface Slots and 1 OAA Slot (JC106A)	
	HP 4-port 8/4/2 Gbps FCoE SFP+ A5820 Module	JC530A
	HP A5800 Access Controller OAA Module	JD441A

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