

HPE FlexFabric 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

HPE FlexFabric 5820 Switch Series supports advanced features that deliver a unique combination of unmatched 10 Gigabit Ethernet; 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 as well as rackspace.

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 congestion actions such as: 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

Extends and integrates application capability into the network, with support for open application architecture (OAA) modules ring resiliency protection protocol (RRPP)

· Provides fast recovery for ring

Ethernet-based topology; helps facilitate consistent application performance for applications such as VoIP

Management

• Remote configuration and management

Enables configuration and management through a secure web browser or a CLI located on a remote device

• 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

Facilitates 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 timekeeping consistent 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

• Auto-MDIX

Provides automatic adjustments 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)

Helps provide high levels of security and ease of administration without impacting network performance with a feature-rich TCAM-based ACL implementation

• 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 FlexFabric 5820AF-24XG Switch (JG219A) supports front-to-back and back-to-front airflow for hot or cold aisles, rear rackmounts, 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

Provides advanced monitoring and reporting capabilities for statistics, history, alarms, and events

• Multiple configuration files

Allows 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

Provides access to many Layer 2 devices

• 4,094 port-based VLANs

Provides security between workgroups

• IEEE 802.1ad QinQ and selective QinQ

Increases the scalability of an Ethernet network by providing a hierarchical structure; connects 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
 Prevents 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

Allows quick failover of router ports

• Policy-based routing

Makes routing decisions based on policies set by the network administrator

• IGMPv1, v2, and v3

Allows 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 **HPE Intelligent**

Management Center (IMC)

• Advanced processor queuing mechanism

Helps prevent denial-of-service (DoS) attacks, while DHCP snooping helps enable 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

Provides a browser-based environment to authenticated clients that is similar to IEEE 802.1X

• 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

• Unicast Reverse Path Forwarding (URPF)

Limits malicious traffic on a network

 Multi-Customer Edge (MCE)—Multicast Virtual Routing and Forwarding (MVRF)

Provides 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)

Utilizes Any-Source Multicast (ASM) or Source-Specific Multicast (SSM) to manage IPv4 multicast networks; supports IGMPv1, v2, and v3

• Protocol Independent Multicast (PIM)

Defines modes of Internet multicasting to allow one-to-many and many-to-many transmission of information; 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 occur 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

- HPE 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 helping eliminate the complexity of Spanning Tree Protocol. ECMP, or VRRP
- OAA modules

Supports wireless network management and high-performance security applications; leverages network infrastructure investment

• Green IT and power

Improves energy efficiency through the use of the latest advances in silicon development; shuts off unused ports and utilizes variable-speed fans, reducing energy costs • High scalability with IRF

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

Warranty and support

• 1-year warranty

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

• Electronic and telephone support

Limited electronic and business-hours telephone support is available from HPE for the entire warranty period; to reach our support centers, refer to hetworking/contact-support; for details on the duration of support provided with your product purchase, refer to hetworking/warrantysummary

• Software releases

To find software for your product, refer to hpe.com/networking/support; for details on the software releases available with your product purchase, refer to hpe.com/networking/warrantysummary

HPE FlexFabric 5820 Switch Series

Specifications



25.98(w) x 17.32(d) x 1.72(h) in. (65.99 x 43.99 x 4.37 cm)

(1U height)

22.05 lb (10 kg) shipping weight

17.32(w) x 16.81(d) x 1.73(h) in. (44.0 x 42.7 x 4.4 cm)

(1U height)

18.74 lb (8.5 kg)



Physical characteristics

Dimensions

Weight

HPE FlexFabric 5820 Switch Series (continued)

	HPE FlexFabric 5820-24XG-SFP+ Switch (JC102B)	HPE FlexFabric 5820AF-24XG Switch (JG219B)	
Memory and processor	2048 MB SDRAM, 512 MB flash; packet buffer size: 2 MB	2048 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)	3 µs (64-byte packets)	
Throughput	Up to 363 million pps (64-byte packets)	360 million pps	
Routing/Switching capacity	488 Gbps	484 Gbps	
Routing table size	12000 entries (IPv4)	12000 entries (IPv4)	
MAC address table size	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)	
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	
Acoustic	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			
Frequency	50/60 Hz	50/60 Hz	
Maximum heat dissipation	631 BTU/hr (665.71 kJ/hr)	607 BTU/hr (640.39 kJ/hr)	
AC voltage	100-120/200-240 VAC	100-120/200-240 VAC	
DC voltage	-48 to -60 VDC	-48 to -60 VDC	
Maximum power rating	300W 650W		
Notes	Maximum power rating and maximum heat dissipation are	Maximum power rating and maximum heat dissipation are	
	the worst-case theoretical maximum numbers provided for	the worst-case theoretical maximum numbers provided for	
	planning the infrastructure with fully loaded PoE (if equipped),	planning the infrastructure with fully loaded PoE (if equipped)	
	100% traffic, all ports plugged in, and all modules populated.	100% traffic, all ports plugged in, and all modules populated.	
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1;	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1;	
	EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1;	EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1;	
	CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST;	CAN/CSA-C22.2 No. 60950-1; Anatel; ULAR; GOST; EN	
	EN 60950-1/A11; FDA 21 CFR Subchapter J; NOM; RoHS	60950-1/A11; FDA 21 CFR Subchapter J; NOM; RoHS	
	Compliance	Compliance	

HPE FlexFabric 5820 Switch Series (continued)

	HPE FlexFabric 5820-24XG-SFP+ Switch (JC102B)	HPE FlexFabric 5820AF-24XG Switch (JG219B)	
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	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	ETSI EN 300 386 V1.3.3	
EN	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	
Radiated	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	
Surge	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	
Power frequency magnetic field	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	
Harmonics	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	
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	
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 power supply, as the device does not come with a PSU. At least one JC680A or JC681A is required.	
Services	Refer to the HPE website at hpe.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 HPE sales office.	Refer to the HPE website at hpe.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 HPE sales office.	

HPE FlexFabric 5820 Switch Series (continued)

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 RFC 3323—A Privacy Mechanism for th 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 Autoconfiguration
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 2655 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

HPE FlexFabric 5820 Switch Series accessories

(applies to all products in series)

Transceivers

HPE X125 1G SFP LC LH40 1310nm Transceiver (JD061A) HPE X120 1G SFP LC LH40 1550nm Transceiver (JD062A) HPE X125 1G SFP LC LH70 Transceiver (JD063B) HPE X120 1G SFP RJ45 T Transceiver (JD089B) HPE X120 1G SFP LC SX Transceiver (JD118B) HPE X120 1G SFP LC LX Transceiver (JD119B) HPE X130 10G SFP+ LC SR Transceiver (JD092B) HPE X130 10G SFP+ LC LRM Transceiver (JD093B) HPE X130 10G SFP+ LC LR Transceiver (JD094B) HPE X130 10G SFP+ LC ER 40km Transceiver (JG234A) HPE X130 10G SFP+ LC LH 80km Transceiver (JG915A)

HPE X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C) HPE X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C) HPE X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C) HPE X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable (JG081C) HPE X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable (JG329A)

HPE X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable (JG330A) HPE X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable (JG331A)

Cables

HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable (QK732A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable (QK734A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable (QK736A) HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)

Power supply

HPE RPS1600 Redundant Power System (JG136A) HPE RPS1600 1600W AC Power Supply (JG137A)

HPE FlexFabric 5820 Switch model-specific accessories

HPE FlexFabric 5820-24XG-SFP+ Switch (JC102B)

HPE 5800 300W AC Power Supply (JC087A) HPE 5800 300W DC Power Supply (JC090A) HPE 5800 1RU Spare Fan Assembly (JC098A)

HPE FlexFabric 5820AF-24XG Switch (JG219B)

HPE 58x0AF 650W AC Power Supply (JC680A) HPE 58x0AF 650W DC Power Supply (JC681A)

HPE 58xOAF Back (power side) to Front (port side) Airflow Fan Tray (JC682A) HPE 58xOAF Front (port side) to Back (power side) Airflow Fan Tray (JC683A)









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