Have feedback on QuickSpecs? We're listening

HPE Networking Comware Switch Series 5900 QuickSpecs

The HPE FlexFabric 5900 Switch series include high density, ultra-low latency Top-of-Rack (ToR) switches suited for deployment at the access layer and management network of medium-sized and large enterprise data centers.

To meet the increased demand for virtualization, scalability and programmability, these switches provide high performance switching with low latency and user-friendly OS (Comware v7). Intelligent Resilient Fabric (IRF) helps in simpler, flatter, and agile networks by combining multiple physical switches into a logical device.

Overview

Network and security features storage convergence coupled with dual, redundant hot swappable power-supplies ensure investment protection, reliability, availability and allow advanced chassis power management.

The HPE FlexFabric 5900 Switch series supports HPE Intelligent Management Center (IMC) with multi-vendor management for complete network visibility.



HPE FlexFabric 5900 Switch



HPE FlexFabric 5901AF Switch

Models

HPE Networking Comware Switch 48-Port 1GBaseT 4XG 2QSFP+ 5901AF	JL864A
HPE Networking Comware Switch 48p 10/100/1000BASE-T 4p SFP+ 10G 2p QSFP+ 40G TAA 5901AF	S3Q88A

Overview

Key features

- New SKU JL864A with high performance, improved energy efficiency of 39-45% (Max/Idle 96W/70W in 5901AF vs 175W/115W in 5900AF), and reduced heat dissipation of 83% (327 BTU/hr in 5901AF vs 597 BTU/hr in 5900AF).
- High-density, high-performance Top-of-Rack (ToR) switch with 48 x 10/100/1000Mbps RJ-45 ports, 4 x 1/10 SFP+ ports and 2 x 40 QFSP+ ports that bridges the gap between legacy and modern networks
- Cut-through with low latency and varying wire speed performance
- HPE Intelligent Resilient Fabric (IRF) for virtualization leading to greater resilience and scalability
- IPv4 and IPv6 support in ToR with full L2/L3 and QoS/ACL features
- OpenFlow and NETCONF for automating manual tasks and improving service delivery
- Dual, redundant hot-pluggable power supplies help in reduced power consumption.

Standard Features

Data center optimized

- **Flexible high port density**
  The HPE FlexFabric 5900 Switch Series provides highly dense 48 port solutions delivered in a 1RU design with multiple wire-speed of 10/100/1000BASE-T, 1/10/40G fiber ports for high performance and flexible deployments thereby bridging the gap between legacy and modern networks. each 40 GbE QSFP+ port can also be configured as four 10GbE ports by using a 40-GbE-to-10GbE splitter cable
- **High-performance switching**
  Cut-through and nonblocking architecture delivers low latency (~3 microsecond for 10GbE) for very demanding enterprise applications; the switch delivers high-performance switching capacity and wire-speed packet forwarding
- **Higher scalability**
  Hewlett Packard Enterprise (HPE) Intelligent Resilient Fabric (IRF) technology simplifies the architecture of server access networks; up to nine HPE FlexFabric 5900 switches can be combined to deliver unmatched scalability of virtualized access layer switches and flatten two-tier networks using IRF, which reduces cost and complexity
- **Advanced modular operating system**
  Comware v7 software's modular design and multiple processes bring native high stability, independent process monitoring, and restart; the OS also allows individual software modules to be upgraded for higher availability and supports enhanced serviceability functions like hitless software upgrades with single-chassis ISSU
- **Front-to-back or back-to-front airflow**
  Enhanced for data center hot-cold aisle deployment with different airflow—for either front-to-back or back-to-front airflow
- **Redundant fans and power supplies**
  1+1 internal redundant and hot-pluggable power supplies and dual fan trays enhance reliability and availability
- **Jumbo frames**
  With frame sizes of up to 9216 bytes on Gigabit Ethernet and 10/40-Gigabit ports, allows high-performance remote backup and disaster-recovery services to be enabled

Additional information

- **Green IT and power**
  Improve energy efficiency using latest advances in silicon development; shuts off unused ports and utilizes variable-speed fans, reducing energy costs
- **Low power consumption**
  Is rated to have one of the lowest power usages in the industry

Convergence

- **LLDP-MED (Media Endpoint Discovery)**
  Is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

Quality of Service (QoS)

Powerful QoS features

- **Flexible classification**
  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, remark, and logging
- **Feature support**
  Provides support for Strict Priority Queuing (SP), Weighted Fair Queuing (WFQ), Weighted Deficit Round Robin (WDRR), SP+WDRR together, configurable buffers, and Weighted Random Early Detection (WRED)
- **Simplified deployment**
  It supports Zero Touch Provisioning by eliminating human errors and automatically setting up network devices leading to accelerated RoI.

Layer 2 switching

- **MAC-based, Protocol-based, and Subnet-based VLANs**
  Provides granular control and security; uses RADIUS to map a MAC address/user to specific VLANs, map protocols to specific VLANs or subnets to specific VLANs.
- **Address Resolution Protocol (ARP)**
  Supports static, dynamic, and reverse ARP and ARP proxy
- **Flow Control**
  IEEE 802.3x Flow Control provides intelligent congestion management via PAUSE frames
- **Ethernet Link Aggregation**
  Provides IEEE 802.3ad Link Aggregation of up to 128 groups of 16 ports; support for LACP, LACP Local Forwarding First, and LACP Short-time provides a fast, resilient environment that is ideal for the data center
- **Spanning Tree Protocol (STP)**
  STP (IEEE 802.1D), Rapid STP (RSTP, IEEE 802.1w), and Multiple STP (MSTP, IEEE 802.1s)
- **VLAN support**
  Provides support for 4,096 VLANs based on port, MAC address, IPv4 subnet, protocol, and guest VLAN; supports VLAN mapping
- **IGMP support**
  Provides support for IGMP Snooping, Fast-Leave, and Group-Policy; IPv6 IGMP Snooping provides Layer 2 optimization of multicast traffic
- **DHCP support at Layer 2**
  Provides full DHCP Snooping support for DHCP Snooping Option 82, DHCP Relay Option 82, DHCP Snooping Trust, and DHCP Snooping Item Backup

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

- **Operations, administration and maintenance (OAM) support**
  provides support for Connectivity Fault Management (IEEE 802.1AG) and Ethernet in the First Mile (IEEE 802.3AH); provides additional monitoring that can be used for fast fault detection and recovery

Layer 3 routing

- **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
- **Equal-Cost Multipath (ECMP)**
  Enables multiple equal-cost links in a routing environment to increase link redundancy and scale bandwidth
- **Layer 3 IPv4 routing**
  Provides routing of IPv4 at media speed; supports static routes, RIP and RIPv2, OSPF, BGP, and IS-IS
- **Open shortest path first (OSPF)**
  Delivers faster convergence; uses this link-state routing InteriorGateway Protocol (IGP), which supports ECMP, NSSA, and MD5 authentication for increased security and graceful restart for faster failure recovery
- **Border Gateway Protocol 4 (BGP4)**
  Delivers an implementation of the Exterior Gateway Protocol (EGP) utilizing path vectors; uses TCP for enhanced reliability for the route discovery process; reduces bandwidth consumption by advertising only incremental updates; supports extensive policies for increased flexibility; scales to very large networks
- **Intermediate system to intermediate system (IS-IS)**
  Uses a path vector Interior Gateway Protocol (IGP), which is defined by the ISO organization for IS-IS routing and extended by IETF RFC 1195 to operate in both TCP/IP and the OSI reference model (Integrated IS-IS)
- **Static IPv6 routing**
  Provides simple manually configured IPv6 routing
- **Dual IP stack**
  Maintains separate stacks for IPv4 and IPv6 to ease the transition from an IPv4-only network to an IPv6-only network design
- **OSPFv3**
  Provides OSPF support for IPv6
- **BGP+**
  Extends BGP-4 to support Multiprotocol BGP (MBGP), including support for IPv6 addressing
- **IS-IS for IPv6**
  Extends IS-IS to support IPv6 addressing
- **IPv6 tunneling**
  Allows IPv6 packets to traverse IPv4-only networks by encapsulating the IPv6 packet into a standard IPv4 packet; supports manually configured, 6to4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels; is an important element for the transition from IPv4 to IPv6
- **Policy routing**
  Allows custom filters for increased performance and security; supports ACLs, IP prefix, AS paths, community lists, and aggregate policies
- **Bidirectional Forwarding Detection (BFD)**
  Enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, and IRF

- **Multicast Routing**
  Provides robust support of multicast protocols PIM-SM, PIM-DM, PIM-SSM and PIM-BIDIR
- **Layer 3 IPv6 routing**
  Provides routing of IPv6 at media speed; supports static routing, OSPFv3, BGP4+ for IPv6, and IS-ISv6

Management

- **USB support**
  - **File copy-** allows users to copy switch files to and from a USB flash drive
- **Multiple configuration files**
  Can be stored to the flash image
- **SNMPv1, v2c, and v3**
  Facilitate centralized discovery, monitoring, and secure management of networking devices
- **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
- **Out-of-band interface**
  Isolates management traffic from user data plane traffic for complete isolation and total reachability, no matter what happens in the data plane
- **Port mirroring**
  Enables traffic on a port to be simultaneously sent to a network analyzer for monitoring
- **Remote configuration and management**
  Is available through a command-line interface (CLI)
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP)**
  Advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **sFlow (RFC 3176)**
  Provides scalable ASIC-based wirespeed network monitoring and accounting with no impact on network performance; this allows network operators to gather a variety of sophisticated network statistics and information for capacity planning and real-time network monitoring purposes
- **Command authorization**
  Leverages RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity
- **Dual flash images**
  Provide independent primary and secondary operating system files for backup while upgrading
- **Command-line interface (CLI)**
  Provides a secure, easy-to-use CLI for configuring the module via SSH or a switch console; provides direct real-time session visibility
- **Logging**
  Provides local and remote logging of events via SNMP (v2c and v3) and syslog; provides log throttling and log filtering to reduce the number of log events generated
- **Management interface control**
  Provides management access through a modem port and terminal interface, as well as in-band and out-of-band Ethernet ports; provides access through terminal interface, Telnet, or secure shell (SSH)

Standard Features

- **Industry-standard CLI with a hierarchical structure**
  Reduces training time and expenses, and increases productivity in multivendor installations
  Management security
  Restricts access to critical configuration commands; offers multiple privilege levels with password protection; ACLs provide Telnet and SNMP access; local and remote syslog capabilities allow logging of all access
- **Network management**
  HPE Intelligent Management Center (IMC) centrally configures, updates, monitors, and provides a central repository for system and network information; aggregates all logs, traps, and debugging information generated by the system and maintains them in order of severity; outputs the network information to multiple channels based on user-defined rules
- **Remote intelligent mirroring**
  Mirrors ingress/egress ACL-selected traffic from a switch port or VLAN to a local or remote switch port anywhere on the network

Manageability

- **Full-featured console**
  Provides complete control of the switch with a familiar CLI
- **Troubleshooting**
  - **Ingress and egress port monitoring:** Enable network problem solving
  - **Traceroute and ping:** Enable testing of network connectivity
- **Multiple configuration files**
  Allow multiple configuration files to be stored to a flash image
- **sFlow (RFC 3176)**
  Provides wire-speed traffic accounting and monitoring
- **SNMP v1, v2c and v3**
  Facilitate centralized discovery, monitoring, and secure management of networking devices
- **Out-of-band interface**
  Isolates management traffic from user data plane traffic for complete isolation and total reachability, no matter what happens in the data plane
- **Remote configuration and management**
  Is available through a secure command-line interface (CLI) over Telnet and SSH; Role-Based Access Control (RBAC) provides multiple levels of access; Configuration Rollback and multiple configurations on the flash provide ease of operation; remote visibility is provided with sFlow and SNMP v1/v2/v3, and is fully supported in HPE Intelligent Management Center (IMC)
- **ISSU and hot patching**
  In Services Software Upgrade (ISSU) provides hitless software upgrades with IRF.Hot patching provides hitless patching for individual systems or IRF
- **Autoconfiguration**
  Provides automatic configuration via DHCP autoconfiguration, NETCONF and Python Scripting
- **Network Time Protocol (NTP), Secure Network Time Protocol (SNTP)**
  Synchronize timekeeping among distributed time servers and clients; keep consistent timekeeping among all clock-dependent devices within the network so that the devices can provide diverse applications based on the consistent time.

Standard Features

Security

- **Access control lists (ACLs)**
  Provide IP Layer 3 filtering based on source/destination IP address/subnet and source/destination TCP/UDP port number
- **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
- **IEEE 802.1X and RADIUS network logins**
  Control port-based access for authentication and accountability
- **Port security**
  Allows access only to specified MAC addresses, which can be learned or specified by the administrator

Resiliency and high availability

- **HPE Intelligent Resilient Fabric (IRF) technology**
  Enables an HPE FlexFabric to deliver resilient, scalable, and secured data center networks for physical and virtualized environments; groups up to nine HPE FlexFabric 5900 switches in an IRF configuration, allowing them to be configured and managed as a single switch with a single IP address; simplifies ToR deployment and management, reducing data center deployment and operating expenses
- **IEEE 802.1w Rapid Convergence Spanning Tree Protocol**
  Increases network uptime through faster recovery from failed links
- **IEEE 802.1s Multiple Spanning Tree**
  Provides high link availability in multiple VLAN environments by allowing multiple spanning trees
- **Per VLAN Spanning Tree (PVST)**
  Provides high link availability in multiple VLAN environments by allowing spanning tree instances per VLAN
- **Virtual Router Redundancy Protocol (VRRP)**
  Allows groups of two routers to dynamically back each other up to create highly available routed environments
- **Hitless patch upgrades**
  Allows patches and new service features to be installed without restarting the equipment, increasing network uptime and facilitating maintenance
- **Ultrafast protocol convergence (< 50 ms) with standard-based failure detection—Bidirectional Forwarding Detection (BFD)**
  Enables link connectivity monitoring and reduces network convergence time for RIP, OSPF, BGP, IS-IS, VRRP, and IRF
- **Device Link Detection Protocol (DLDP)**
  Monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks
- **Graceful restart**
  allows routers to indicate to others their capability to maintain a routing table during a temporary shutdown and significantly reduces convergence times upon recovery; supports OSPF, BGP, and IS-IS

Warranty and support

- **1-year warranty**
  See https://www.hpe.com/us/en/networking/hpe-aruba-networking-support-services.html for warranty and support information included with your product purchase.
- **Software releases**
  To find software for your product, refer to http://www.hpe.com/networking/support; for details on the software releases available with your product purchase, refer to https://www.hpe.com/us/en/networking/hpe-aruba-networking-support-services.html

Configuration Information

BTO Models

Standard Switch Enclosures

Description	SKU
5900AF	
HPE Networking Comware Switch 48-Port 1GBaseT 4XG 2QSFP+ 5901AF	JL864A
HPE Networking Comware Switch 48p 10/100/1000BASE-T 4p SFP+ 10G 2p QSFP+ 40G TAA 5901AF	S3Q88A

Configuration Information

Rack Level Integration CTO Models

CTO Switch Chassis

Description	SKU
5900AF	
HPE Networking Comware Switch 48-Port 1GBaseT 4XG 2QSFP+ 5901AF	JL864A
HPE Networking Comware Switch 48p 10/100/1000BASE-T 4p SFP+ 10G 2p QSFP+ 40G TAA 5901AF	S3Q88A

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

Transceivers

Description	SKU
SFP Transceivers	
HPE Networking X120 1G SFP RJ45 T Transceiver	JD089B
HPE Networking X120 1G SFP LC SX Transceiver	JD118B
HPE Networking X120 1G SFP LC LX Transceiver	JD119B
HPE Networking X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE Networking X120 1G SFP LC BX 10-D Transceiver	JD099B
HPE Networking X120 1G SFP LC LH100 Transceiver	JD103A
SFP+ Transceivers	
HPE Networking X130 10G SFP+ LC SR Transceiver	JD092B
HPE Networking X130 10G SFP+ LC LR Transceiver	JD094B
HPE Networking X130 10G SFP+ LC BiDi 40km-Downlink Transceiver	JL740A
HPE Networking X130 10G SFP+ LC ER 40km Transceiver	JG234A
HPE Networking X130 10G SFP+ LC BiDi 40km-Uplink Transceiver	JL739A
HPE Networking X130 10G SFP+ LC LH 80km Transceiver	JG915A
HPE Networking X130 10G SFP+ LC BiDi 10km-Uplink Transceiver	JL737A
HPE Networking X130 10G SFP+ LC BiDi 10km-Downlink Transceiver	JL738A
HPE Networking X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
HPE Networking X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
HPE Networking X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
HPE Networking X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
HPE Networking X240 10G SFP+ 7m DAC Cable	JC784C
HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
QSFP+ Transceivers	
HPE Networking X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
HPE Networking X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE Networking X140 40G QSFP+ CSR4 300m Transceiver	JG709A
HPE Networking X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
HPE Networking X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
HPE Networking Comware X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
HPE Networking Comware X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A

Configuration Information

HPE Networking Comware X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HPE Networking Comware X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
HPE Networking X2A0 40G QSFP+ to QSFP+ 7m Active Optical Cable	JL287A
HPE Networking X2A0 40G QSFP+ to QSFP+ 10m Active Optical Cable	JL288A
HPE Networking X2A0 40G QSFP+ to QSFP+ 20m Active Optical Cable	JL289A

Internal Power Supplies

System (std 0 // max 2) User Selection (min 1 // max 2) per switch

HPE Networking X361 150W 100-240VAC to 12VDC Power Supply	JD362B
HPE Networking X361 150W 100-240VAC to 12VDC Power Supply	JD362B
HPE Networking X361 150W 100-240VAC to 12VDC Power Supply	JD362B
HPE Networking X361 150W 100-240VAC to 12VDC Power Supply	JD362B
HPE Networking X361 150W 48-60VDC to 12VDC Power Supply	JD366B

Technical Specifications

HPE FlexFabric 5901AF 48G 4XG 2QSFP+ Switch (JL864A)		
I/O ports and slots	48 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 4 fixed 1000/10000 SFP+ ports; Half Duplex: SFP+ 2 QSFP+ 40-GbE ports	
Additional ports and slots	1 x RJ45 console port 1 x mini-USB port 1 x USB port 2 x out-of-band management ports (1 x SFP GbE port and one copper port)	
Power supplies	2 power supply slots 1 minimum power supply required (ordered separately)	
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 for more than two minutes. The system should not be operated outside of the temperature range of 23°F (-5°C) to 113°F (45°C). Failure to comply with these operating requirements may void the product warranty.	
Physical characteristics	**Dimensions**	17.32(w) x 14.17(d) x 1.73(h) in (43.99 x 36.0 x 4.4 cm) (1U height)
	Weight	16.535 lb (<7.5kg) shipping weight
Memory and processor	1 GB flash; Packet buffer size: 8 MB, 2 GB SDRAM	
Performance	**Latency**	1GE < 5 µs, 10GE < 3 µs and 40GE <1,2 µs (64-byte packets)
	Throughput	up to 250 Mpps (64-byte packets)
	Routing/Switching capacity	336 Gbps
	Routing table size	16000 entries (IPv4), 8000 entries (IPv6)
	MAC address table size	110000 entries
Environment	**Operating temperature**	23°F to 113°F (-5°C to 45°C)
	Operating relative humidity	10% to 95%, noncondensing
	Acoustic	Low-speed fan: 43.6dB, High-speed fan: 56.9dB
Electrical characteristics	**Frequency**	50/60 Hz
	Maximum heat dissipation	327.6 BTU/hr (345.63 kJ/hr)
	Voltage	100 - 240 VAC, rated -48 to -60 VDC, rated (depending on power supply chosen)
	Maximum power rating	96 W (Dual AC)
	Idle power	70 W (Dual AC)

Technical Specifications

	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.
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	CISPR 32:2015 Class A; VCCI Class A; EN 55032 Class A; ICES-003 Class A; AS/NZS CISPR 32 Class A; EN 61000-3-2:2014; EN 61000-3-3:2013;; FCC (CFR 47, Part 15 B) Class A	

Standards and protocols

Applies to all products in series

BGP

- RFC 1163 Border Gateway Protocol (BGP)
- RFC 1771 BGPv4
- RFC 1997 BGP Communities Attribute
- RFC 2918 Route Refresh Capability
- RFC 3392 Capabilities Advertisement with BGP-4
- RFC 4271 A Border Gateway Protocol 4 (BGP-4)
- RFC 4360 BGP Extended Communities Attribute
- RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP)
- RFC 4760 Multiprotocol Extensions for BGP-4

Device Management

- RFC 1157 SNMPv1/v2c
- RFC 1305 NTPv3
- RFC 1591 DNS (client)
- RFC 1902 (SNMPv2)
- RFC 1908 (SNMP v1/2 Coexistence)
- RFC 2573 (SNMPv3 Applications)
- RFC 2576 (Coexistence between SNMP V1, V2, V3)
- Multiple Configuration Files
- Multiple Software Images
- SSHv1/SSHv2 Secure Shell
- TACACS/TACACS+

General Protocols

- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3ae 10-Gigabit Ethernet
- IEEE 802.3ag Ethernet OAM
- IEEE 802.3ah Ethernet in First Mile over Point to Point Fiber - EFMF
- IEEE 802.3x Flow Control
- RFC 768 UDP
- RFC 783 TFTP Protocol (revision 2)
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET

Technical Specifications

- RFC 856 TELNET
- RFC 868 Time Protocol
- RFC 896 Congestion Control in IP/TCP Internetworks
- RFC 950 Internet Standard Subnetting Procedure
- RFC 1027 Proxy ARP
- RFC 1058 RIPv1
- RFC 1091 Telnet Terminal-Type Option
- RFC 1141 Incremental updating of the Internet checksum
- RFC 1142 OSI IS-IS Intra-domain Routing Protocol
- RFC 1191 Path MTU discovery
- RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
- RFC 1253 (OSPF v2)
- RFC 1531 Dynamic Host Configuration Protocol
- RFC 1533 DHCP Options and BOOTP Vendor Extensions
- RFC 1534 DHCP/BOOTP Interoperation
- RFC 1541 DHCP
- RFC 1591 DNS (client only)
- RFC 1624 Incremental Internet Checksum
- RFC 1723 RIP v2
- RFC 1812 IPv4 Routing
- RFC 2030 Simple Network Time Protocol (SNTP) v4
- RFC 2131 DHCP
- RFC 2236 IGMP Snooping
- RFC 2338 VRRP
- RFC 2453 RIPv2
- RFC 2581 TCP Congestion Control
- RFC 2644 Directed Broadcast Control
- RFC 2767 Dual Stacks IPv4 & IPv6
- RFC 3046 DHCP Relay Agent Information Option
- RFC 3768 Virtual Router Redundancy Protocol (VRRP)
- RFC 4250 The Secure Shell (SSH) Protocol Assigned Numbers
- RFC 4251 The Secure Shell (SSH) Protocol Architecture
- RFC 4252 The Secure Shell (SSH) Authentication Protocol
- RFC 4253 The Secure Shell (SSH) Transport Layer Protocol
- RFC 4254 The Secure Shell (SSH) Connection Protocol
- RFC 4419 Diffie-Hellman Group Exchange for the Secure Shell (SSH) Transport Layer Protocol
- RFC 4594 Configuration Guidelines for DiffServ Service Classes
- RFC 4941 Privacy Extensions for Stateless Address Autoconfiguration in IPv6

IPv6

- RFC 2080 RIPng for IPv6
- RFC 2460 IPv6 Specification
- RFC 2461 IPv6 Neighbor Discovery
- RFC 2462 IPv6 Stateless Address Auto-configuration
- RFC 2463 ICMPv6
- RFC 2464 Transmission of IPv6 over Ethernet Networks

Technical Specifications

- RFC 2473 Generic Packet Tunneling in IPv6
- RFC 2545 Use of MP-BGP-4 for IPv6
- RFC 2563 ICMPv6
- RFC 2711 IPv6 Router Alert Option
- RFC 2740 OSPFv3 for IPv6
- RFC 2767 Dual stacks IPv46 & IPv6
- RFC 3315 DHCPv6 (client and relay)
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4862 IPv6 Stateless Address Auto-configuration
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6

MIBs

- RFC 1213 MIB II
- RFC 1907 SNMPv2 MIB
- RFC 2571 SNMP Framework MIB
- RFC 2572 SNMP-MPD MIB
- RFC 2573 SNMP-Notification MIB
- RFC 2573 SNMP-Target MIB
- RFC 2574 SNMP USM MIB
- RFC 2737 Entity MIB (Version 2)
- RFC 3414 SNMP-User based-SM MIB
- RFC 3415 SNMP-View based-ACM MIB
- LLDP-EXT-DOT1-MIB
- LLDP-EXT-DOT3-MIB
- LLDP-MIB

Network Management

- RFC 3164 BSD syslog Protocol

OSPF

- RFC 1587 OSPF NSSA
- RFC 2328 OSPFv2
- RFC 3101 OSPF NSSA
- RFC 3137 OSPF Stub Router Advertisement
- RFC 3623 Graceful OSPF Restart
- RFC 4577 OSPF as the Provider/Customer Edge
- RFC 4811 OSPF Out-of-Band LSDB
- Resynchronization
- RFC 4812 OSPF Restart Signaling
- RFC 4813 OSPF Link-Local Signaling

Technical Specifications

QoS/CoS

- IEEE 802.1p (CoS)
- RFC 2475 DiffServ Architecture
- RFC 2597 DiffServ Assured Forwarding (AF)
- RFC 3247 Supplemental Information for the New Definition of the EF PHB (Expedited Forwarding Per-Hop Behavior)
- RFC 3260 New Terminology and Clarifications for DiffServ

Security

- Access Control Lists (ACLs)SSHv2 Secure Shell

Summary of Changes

Date	Version History	Action	Description of Change
19-Oct-2026	Version 42	Changed	Survey link text was updated.
02-Feb-2026	Version 41	Changed	Configuration Information section was updated.
04-Oct-2021	Version 40	Changed	Overview, Standard Features, Configuration Information, and Technical Specifications sections were updated.
03-Aug-2020	Version 39	Changed	SKU description were updated. Obsolete SKUs were removed.
04-Feb-2019	Version 38	Changed	Removed Box Level CTO SSP Section and logic from menu and configurators
21-Sep-2018	Version 37	Changed	Recommended and Extended markings removed from the document. Features and benefits updated
06-Aug-2018	Version 36	Changed	Configuration section updated: Added 10G AOC Cable compatibility
07-May-2018	Version 35	Changed	Configuration section updated
06-Mar-2017	Version 34	Added	SKUs added: JL437A, JL438A, JL439A
11-Nov-2016	Version 33	Removed	Removed not supported transceivers: JD098B; JD099B
19-Aug-2016	Version 32	Changed	Configuration section updated (#AC3 option added)
01-Aug-2016	Version 31	Changed	SKUs added: JL287A, JL288A, JL289A, JL290A, JL291A, JL292A, JL250A, JL286A. Overview and Technical Specifications updated.
06-Jun-2016	Version 30	Changed	Document name changed to HPE FlexFabric 5900 Switch Series. Product description updated.
15-Apr-2016	Version 29	Changed	SKUs descriptions updated on all the document.
16-Feb-2016	Version 28	Changed	SKU added: JL251A Overview, Technical Specifications and Accessories updated,
08-Jan-2016	Version 27	Changed	Warranty and support updated
12-Oct-2015	Version 26	Changed	Overview, Technical Specifications and Accessories updated,
12-Dec-2014	Version 25	Removed	Deleted SKU JG325A
01-Dec-2014	Version 24	Added	Accessories section added
		Changed	Changes made on the entire document
09-Jun-2014	Version 23	Changed	Overview section revised.
31-Mar-2014	Version 22	Changed	Transceivers were revised.
19-Mar-2014	Version 21	Changed	Configuration was revised
04-Mar-2014	Version 20	Changed	Transceivers and Switch Options were revised.
25-Feb-2014	Version 19	Changed	Transceivers and Switch Options were revised.
18-Feb-2014	Version 18	Added	HPE FF 5900CP-48XG -4QSFP+ Switch was added to Configuration.
12-Nov-2013	Version 17	Changed	Build to Order, Box Level Integration CTO Models, Rack Level Integration CTO Models, Internal Power Supplies, and Switch Options were revised.
14-Oct-2013	Version 16	Added	Added a new Transceiver in two locations in the Configuration section.
09-Aug-2013	Version 15	Changed	Configuration was revised.
19-Jul-2013	Version 14	Changed	Configuration was revised.
02-Jul-2013	Version 13	Changed	The description of model JG336A was corrected throughout.
12-Jun-2013	Version 9	Changed	Build-to-Order was revised.
10-Jun-2013	Version 8	Changed	Configuration was revised.

Summary of Changes

25-Mar-2013	Version 7	Changed	Added Part numbers and descriptions to the following Sections: Build to Order, Box Level Integration CTO Models, Rack Level Integration CTO Models , Switch Options Added Notes 3, and 4 to the Switch Options Section Deleted several part numbers to the Standards and Protocols Section
27-Feb-2013	Version 6	Changed	The formatting of the new Configuration section was revised.
19-Feb-2013	Version 5	Added	The configuration section was added. Line art was added.
		Changed	Product overview, Features and benefits, Model specifications, and Accessories were revised.
04-Dec-2012	Version 3	Changed	Updated Features and Benefits and made minor updates to the model specifications and accessories.
02-Apr-2011	Version 2	Changed	Part number was revised.
16-Nov-2011	Version 1	New	New QuickSpecs

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