Overview

Product overview

The HP 5920 Switch Series is made up of high-density 10GbE, ultra-deep packet buffering, top-of-rack (ToR) switches. These switches are part of the HP FlexNetwork architecture's HP FlexFabric solution module and are ideally suited for deployments at the server access layer of large enterprise data centers. The HP 5920 Switch Series is also designed for content delivery networks, especially when they are used to reduce network congestion at the I/O that is associated with the heavy use of server virtualization, as well as bursty multimedia, storage applications, and other critical services. With the increase in virtualized applications and server-to-server traffic, businesses now require ToR switch innovations that will meet their needs for higher-performance server connectivity, convergence of Ethernet and storage traffic, the capability to handle virtual environments, and ultra-deep packet buffering all in a single device.
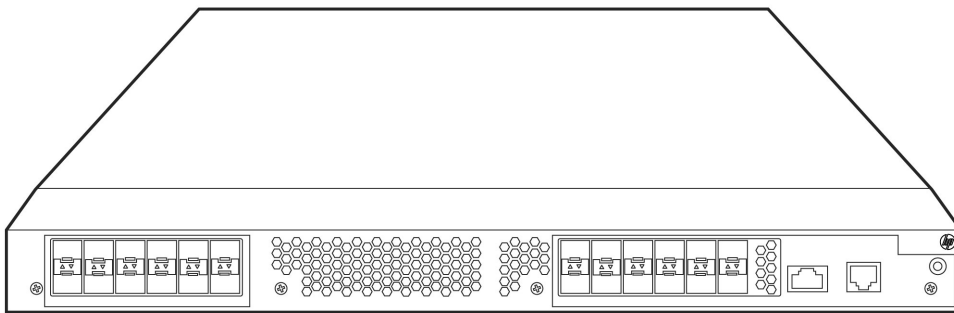
Key features

- Ultra-deep packet buffering
- HP IRF for virtualization and a 2-tier architecture
- High 10GbE ToR port density
- IPv6 support in ToR with full L2/L3 features
- TRILL and VEPA readiness for virtualized networks

Features and benefits

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, Explicit Congestion Notification (ECN), and Weighted Random Early Detection (WRED)

Data center optimized

Overview

- **High-performance 10 GbE switching**
  enables you to scale your server-edge 10GbE ToR deployments with 24 high-density 10GbE ports delivered in a 1RU design; delivers a 480 Gbps (357.12 Mpps) switching capacity in addition to incorporating 3.6 GB of packet buffers
- **Ultra-deep packet buffering**
  provides up to a 3.6 GB packet buffer to eliminate network congestion at the I/O that is associated with the heavy use of server virtualization, as well as bursty multimedia, storage applications, and other critical services
- **Higher scalability**
  HP Intelligent Resilient Framework (IRF) technology simplifies the architecture of server access networks; up to four HP 5920 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
- **Advanced modular operating system**
  Comware v7 software's modular design and multiple processes deliver 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
- **TRILL and VEPA ready**
  Transparent Interconnection of Lots of Links (TRILL) is supported to increase the scale of enterprise data centers; EVB/VEPA provides connectivity into the virtual environment for a data center-ready environment
- **Reversible airflow**
  switches are enhanced for data center hot/cold aisle deployments with reversible 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
- **Lower OPEX and greener data center**
  provide reversible airflow and advanced chassis power management
- **Data Center Bridging (DCB) protocols**
  support IEEE 802.1Qbb Priority Flow Control (PFC), Data Center Bridging Exchange (DCBX), and IEEE 802.1Qaz Enhanced Transmission Selection (ETS) for converged applications
- **FCoE support**
  provides support for FCoE, including expansion, fabric, trunk VF and N ports, aggregation of E-port, N-port virtualization; fabric services such as name server, registered state change notification, and login services; per-VSAN fabric services, FSPF, soft and hard zoning, Fibre Channel traceroute, ping, debugging, and FIP snooping
- **Jumbo frames**
  with frame sizes of up to 10,000 bytes on Gigabit Ethernet and 10-Gigabit ports, high-performance remote backup and disaster-recovery services can be enabled

Management

- **IEEE 802.1ab LLDP discovery**
  advertises and receives management information from adjacent devices on a network, facilitating easy mapping by network management applications
- **SNMPv1, v2c, and v3**
  facilitate centralized discovery, monitoring, and secure management of networking devices
- **Port mirroring**
  enables traffic on a port to be simultaneously sent to a network analyzer for monitoring
- **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 with sFlow and SNMP v1/v2/v3 is fully supported in HP Intelligent Management Center (IMC)

Overview

- **ISSU and hot patching**
  provides hitless software upgrades with single-unit In Services Software Upgrade (ISSU) and hitless patching of modular OS
- **Autoconfiguration**
  provides automatic configuration via DHCP autoconfiguration
- **Network Time Protocol (NTP) and Secure Network Time Protocol (SNTP)**
  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

Resiliency and high availability

- **Intelligent Resilient Framework (IRF)**
  HP IRF technology enables an HP FlexFabric to deliver resilient, scalable, and secured data center networks for physical and virtualized environments; up to four 5920 switches can be grouped together in an IRF configuration, which allows them to be configured and managed as a single switch with a single IP address; this simplifies ToR deployment and management, reducing data center deployment and operating expenses

Layer 2 switching

- **Address Resolution Protocols (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**
  IEEE 802.3ad Link Aggregation of up to 128 groups of 16 ports; support for LACP, LACP Local Forwarding First, and LACP Short Timeout provide 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) provide loop avoidance
- **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, Group-Policy, and IPv6; IGMP Snooping provides Layer 2 optimization of multicast traffic
- **DHCP support at Layer 2**
  provides full DHCP Snooping support, including 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
- **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**

Overview

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

Additional information

- **Green IT and power**
  use the latest advances in silicon development, shut off unused ports, and use variable-speed fans to improve energy efficiency
- **Low power consumption**
  is rated to have one of the lowest power usages in the industry by Miercom independent tests

Warranty and support

- **1-year warrant**y
  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

Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

HP 5920AF-24XG Switch	JG296A

- 24 fixed 1000/10000 SFP+ ports   See Configuration
- min=0 \ max=24 SFP or SFP+ Transceivers   Note: 1
- Must select min 2 Fan Tray
- Must select min 1 Power Supply
- 1U - Height

Note 1	The following Transceivers install into this switch:	
	HP X130 SFP+ LC SR Transceiver	JD092B
	HP X130 SFP+ LC LRM Transceiver	JD093B
	HP X130 SFP+ LC LR Transceiver	JD094B
	HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
	HP X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
	HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
	HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
	HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
	HP X240 10G SFP+ 7m DAC Cable	JC784C
	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 BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X125 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B

Box Level Integration CTO Models

CTO Solution Sku	HP 59xx CTO Switch Solution	JG505A
	SSP trigger sku	
CTO Switch Chassis	HP 5920AF-24XG Switch	JG296A

- 24 fixed 1000/10000 SFP+ ports   See Configuration
- (min=0 \ max=24 SFP or SFP+ Transceivers)   Note: 1,2,10
- Must select min 2 Fan Tray
- Must select min 1 Power Supply
- 1U - Height

Note 1	The following Transceivers install into this switch: (Use #0D1 or #B01quoted to switch if switch is CTO) - if applicable	
	HP X130 SFP+ LC SR Transceiver	JD092B
	HP X130 SFP+ LC LRM Transceiver	JD093B
	HP X130 SFP+ LC LR Transceiver	JD094B

Configuration

HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
HP X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
HP X240 10G SFP+ 7m DAC Cable	JC784C
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 BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X125 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B

Note2   Switch Height is 2U if the JG297A - HP 5920AF-24XG Bk(pwr)-Frt(prt) Fn Tray is ordered #0D1 with this switch.

Note 10   If the Switch Chassis is to be Box Level Factory Integrated (CTO), Then the #0D1 is required on the Switch Chassis and integrated to the JG505A - HP 59xx CTO Switch Solution. (Max 1 switch per SSP)

Rack Level Integration CTO Models

HP 5920AF-24XG Switch	JG296A
• 24 fixed 1000/10000 SFP+ ports	See Configuration
• (min=0 \ max=24 SFP or SFP+ Transceivers)	Note: 1,2,4,5
• Must select min 2 Fan Tray	
• Must select min 1 Power Supply	
• 1U - Height	

Note 1   The following Transceivers install into this switch: (Use #0D1 qutoed to switch if switch is CTO) - if applicable

HP X130 SFP+ LC SR Transceiver	JD092B
HP X130 SFP+ LC LRM Transceiver	JD093B
HP X130 SFP+ LC LR Transceiver	JD094B
HP X130 10G SFP+ LC ER 40km Transceiver	JG234A
HP X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
HP X240 10G SFP+ 7m DAC Cable	JC784C
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 BX 10-U Transceiver	JD098B
HP X120 1G SFP LC BX 10-D Transceiver	JD099B
HP X125 1G SFP LC SX Transceiver	JD118B

Configuration

	HP X120 1G SFP LC LX Transceiver	JD119B
Note 2	If HP CTO Switch Chassis is selected to be Rack Level Integration (No SSP Sku), Then #B2B, or #B2C is Required on the Power Supply's. (Optional when Switch is not Factory Racked. See Drop down remark in "Power Supplies" section.)	
Note 4	Switch Height is 2U if the JG297A - HP 5920AF-24XG Bk(pwr)-Frt(prt) Fn Tray is ordered #0D1 with this switch.	
Note 5	If HP CTO Switch Chassis is selected to be Rack Level Integration, Then the JG296A - HP 5920AF-24XG Switch needs to integrate (with #0D1) to the HP Universal Rack.	

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

Internal Power Supplies	System (std 0 // max 2) User Selection (min 1 // max 2) per switch	
	HP 58x0AF 650W AC Power Supply	JC680A
	• includes 1 x c13, 300w	See Configuration Note: 1,2,3
	C15 PDU NA	JC680A#B2B
	• C15 to C14 Jumper Cord (NA)	
	C15 PDU ROW	JC680A#B2B
	• C15 to C14 Jumper Cord (ROW)	
	HP 58x0AF 650W DC Power Supply	JC681A
		See Configuration Note: 1

Configuration Rules

Note 1	If 2 power supplies are selected they must be the same Sku number.
Note 2	Localization required on orders without #B2B or #B2C options.
Note 3	If HP CTO Switch Chassis is selected to be Rack Level Integration is ordered #0D1 (No SSP Sku) with this power supply, Then #B2B, or #B2C is Required on the Power Supplies. (Optional when Switch is not Factory Racked. See Drop down remark in "Power Supplies" section.)
Remarks:	Drop down under power supply should offer the following options and results: Switch to PDU Power Cord - replace localized option with #B2B in AMS or #B2C in APJ and EMEA. Switch to Wall Power Cord - Should leave existing Localized Option (no #B2x options)

Localization	HP A58x0AF 650W AC Power Supply - Chile - English localization	JC680A#A1X
	Power Cord: Quantity : 1, CEI 23-50, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0825	
	HP A58x0AF 650W AC Power Supply - U.S. - English localization	JC680A#ABA
	Power Cord: Quantity : 1, NEMA 5-15P, C13 STRAIGHT, 125 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0822	
	HP A58x0AF 650W AC Power Supply - Europe - English localization	JC680A#ABB
	Power Cord: Quantity : 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0823	
	HP A58x0AF 650W AC Power Supply - Australia - English localization	JC680A#ABG
	Power Cord: Quantity : 1, AS/NZS 3112, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0828	

Configuration

HP A58x0AF 650W AC Power Supply - Brazil - Portuguese localization	JC680A#AC4
Power Cord: Quantity : 1, NBR 14136 Fig13, C13 STRAIGHT, 250 V, 2.5 A, 2.5 meters, 8.21 feet , Part Store #: 8121-1069	
HP A58x0AF 650W AC Power Supply - Korea - English localization	JC680A#AC6
Power Cord: Quantity : 1, CEE 7-VII, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0823	
HP A58x0AF 650W AC Power Supply - United Kingdom - English localization	JC680A#ACC
Power Cord: Quantity : 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0824	
HP A58x0AF 650W AC Power Supply - Switzerland - English localization	JC680A#ACD
Power Cord: Quantity : 1, SEV 6534-2 Type 12, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0827	
HP A58x0AF 650W AC Power Supply - Denmark - English localization	JC680A#ACE
Power Cord: Quantity : 1, DK 2-5A, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0826	
HP A58x0AF 650W AC Power Supply - Japan - English localization	JC680A#ACF
Power Cord: Quantity : 1, JIS C 8303, C13 STRAIGHT, 125 V, 12 A, 2.3 meters, 7.55 feet , Part Store #: 8120-4753	
HP A58x0AF 650W AC Power Supply - India - English localization	JC680A#ACJ
Power Cord: Quantity : 1, IS 1293, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0928	
HP A58x0AF 650W AC Power Supply - South Africa - English localization	JC680A#ACQ
Power Cord: Quantity : 1, SABS 164, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0919	
HP A58x0AF 650W AC Power Supply - Israel - English localization	JC680A#AKJ
Power Cord: Quantity : 1, SI 32 90-DEG, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet , Part Store #: 8121-1035	
HP A58x0AF 650W AC Power Supply - Thailand - English localization	JC680A#AKL
Power Cord: Quantity : 1, NEMA 5-15P, C13 STRAIGHT, 250 V, 10 A, 2.5 meters, 8.21 feet , Part Store #: 8121-0673	
HP A58x0AF 650W AC Power Supply - China - English localization	JC680A#AKM
Power Cord: Quantity : 1, GB 1002, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0829	
HP A58x0AF 650W AC Power Supply - Taiwan - English localization	JC680A#ARB
Power Cord: Quantity : 1, CNS 690 Type 2(1), C13 STRAIGHT, 125 V, 13 A, 3.6 meters, 11.82 feet , Part Store #: 8121-0965	
HP A58x0AF 650W AC Power Supply - Malaysia - English localization	JC680A#ARE
Power Cord: Quantity : 1, BS 1363/A, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0824	
HP A58x0AF 650W AC Power Supply - Argentina - English localization	JC680A#ARM
Power Cord: Quantity : 1, IRAM 2073, C13 STRAIGHT, 250 V, 10 A, 3 meters, 9.85 feet , Part Store #: 8121-0883	

Configuration

Transceivers	SFP Transceivers	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 BX 10-U Transceiver	JD098B
		HP X120 1G SFP LC BX 10-D Transceiver	JD099B
		HP X125 1G SFP LC SX Transceiver	JD118B
		HP X120 1G SFP LC LX Transceiver	JD119B
	SFP+ Transceivers	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 X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
		HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
		HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
		HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
		HP X240 10G SFP+ 7m DAC Cable	JC784C
		HP X130 10G SFP+ LC ER 40km Transceiver	JG234A

Switch Options	Fan Trays	**System (std 0 // max 2) User Selection (min 2 // max 2) per switch**	
		HP 5920AF-24XG Bk(pwr)-Frt(prt) Fn Tray	JG297A
			See Configuration Note: 1,2
		HP 5920AF-24XG Frt(prt)-Bk(pwr) Fn Tray	JG298A
			See Configuration Note: 1

Configuration Rules

Note 1   Fan Trays cannot be mixed in the same switch enclosure

Note 2   This Fan Tray requires an Air Plenum kit for better air flow. The Air Plenum kit requires 1U of additional space in the rack.

Technical Specifications

HP 5920AF-24XG Switch (JG296A)

Ports	24 fixed 1000/10000 SFP+ ports 1 RJ-45 serial console port 1 RJ-45 out-of-band management 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 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	**Dimensions**	17.32(w) x 25.98(d) x 1.72(h) in (43.99 x 65.99 x 4.37 cm) (1U height)
	Weight	28.66 lb (13 kg)

Memory and processor	256 MB flash, 2 GB SDRAM; packet buffer size: 3.6 GB

Performance	**Latency**	< 1.7 μs (64-byte packets)
	Throughput	367 million pps
	Routing/Switching capacity	480 Gbps
	Routing table size	16000 entries (IPv4)
	MAC address table size	128000 entries

Environment	**Operating temperature**	32°F to 113°F (0°C to 45°C)
	Operating relative humidity	10% to 90%, noncondensing
	Nonoperating/Storage temperature	–40°F to 158°F (–40°C to 70°C)
	Nonoperating/Storage relative humidity	5% to 95%, noncondensing
	Acoustic	Low-speed fan: 62.1 dB, High-speed fan: 76.7 dB

Electrical characteristics	**Maximum heat dissipation**	1249 BTU/hr (1317.7 kJ/hr)
	Voltage	100-240 VAC
	DC voltage	–36 to –72 VDC
	Idle power	343 W
	Maximum power rating	366 W
	Frequency	50/60 Hz
	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.

Technical Specifications

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 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
	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	EN 61000-4-8; IEC 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; out-of-band management; SNMP Manager; Telnet; FTP	
Notes	The customer must order a 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 (U1V72E) 3-year, 4-hour onsite, 13x5 coverage for hardware (U1V62E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U1V64E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 SW phone support and SW updates (U6A03E) 3-year, 24x7 SW phone support, software updates (U1V70E) 4-year, 4-hour onsite, 13x5 coverage for hardware (U6A05E) 4-year, 4-hour onsite, 24x7 coverage for hardware (U6A07E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U6A15E) 4-year, 24x7 SW phone support, software updates (U6A13E) 5-year, 4-hour onsite, 13x5 coverage for hardware (U6A17E) 5-year, 4-hour onsite, 24x7 coverage for hardware (U6A19E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (U6A27E) 5-year, 24x7 SW phone support, software updates (U6A25E) 3 Yr 6 hr Call-to-Repair Onsite (U1V67E) 4 Yr 6 hr Call-to-Repair Onsite (U6A10E) 5 Yr 6 hr Call-to-Repair Onsite (U6A22E) 1-year, 4-hour onsite, 13x5 coverage for hardware (U1V96E) 1-year, 4-hour onsite, 24x7 coverage for hardware (U1V98E)	

Technical Specifications

1-year, 6 hour Call-To-Repair Onsite for hardware (U1W00E)
1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support and software updates (U1V60E)

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)

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 4253 The Secure Shell (SSH) Transport Layer Protocol
RFC 4254 The Secure Shell (SSH) Connection Protocol
RFC 4364 BGP/MPLS IP Virtual Private Networks (VPNs)
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 2711 IPv6 Router Alert Option
RFC 2740 OSPFv3 for IPv6
RFC 3315 DHCPv6 (client only)
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
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
IEEE 802.1D (STP)
RFC 3164 BSD syslog Protocol

Technical Specifications

RFC 826 ARP
RFC 854 TELNET
RFC 856 TELNET
RFC 868 Time Protocol
RFC 896 Congestion Control in IP/TCP Internetworks
RFC 903 RARP
RFC 950 Internet Standard Subnetting Procedure
RFC 959 File Transfer Protocol (FTP)
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 1350 TFTP Protocol (revision 2)
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 2131 DHCP
RFC 2236 IGMP Snooping
RFC 2338 VRRP
RFC 2453 RIPv2
RFC 2581 TCP Congestion Control
RFC 2644 Directed Broadcast Control
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 3176 sFlow
SNMPv1/v2c/v3

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 Protocol for BGP/MPLS IP Virtual Private Networks (VPNs)
RFC 4811 OSPF Out-of-Band LSDB Resynchronization
RFC 4812 OSPF Restart Signaling
RFC 4813 OSPF Link-Local Signaling
RFC 5340 OSPFv3 for IPv6

QoS/CoS
IEEE 802.1P (CoS)
RFC 1349 Type of Service in the Internet Protocol Suite
RFC 2474 DiffServ Precedence, including 8 queues/port
RFC 2475 DiffServ Architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 3168 The Addition of Explicit Congestion Notification (ECN) to IP
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
Ingress Rate Limiting

Security
IEEE 802.1X Port Based Network Access Control
RFC 1492 TACACS+
Access Control Lists (ACLs)
Guest VLAN for 802.1x
Port Security
SSHv1/SSHv2 Secure Shell

Accessories

HP 5920 Switch Series accessories	**Transceivers**	
	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 LC BX 10-U Transceiver	JD098B
	HP X120 1G SFP LC BX 10-D Transceiver	JD099B
	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X120 1G SFP RJ45 T Transceiver	JD089B
	HP X130 SFP+ LC SR Transceiver	JD092B
	HP X130 SFP+ LC LRM Transceiver	JD093B
	HP X130 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
	Power Supply	
	HP 58x0AF 650W AC Power Supply	JC680A
	HP 58x0AF 650W DC Power Supply	JC681A
	Fan Tray	
	HP 5920AF-24XG Back (power-side) to Front (port-side) Airflow Fan Tray	JG297A
	HP 5920AF-24XG Front (port-side) to Back (power-side) Airflow Fan Tray	JG298A

Accessory Product Details

NOTE: Details are not available for all accessories. The following specifications were available at the time of publication.

HP X125 1G SFP LC LH40 1310nm Transceiver (JD061A) A small form-factor pluggable SFP Gigabit LH40 transceiver that provides a full duplex Gigabit solution up to 40km on a single-mode fiber.	**Ports**	1 LC 1000Base-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
		Wavelength	1310 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: ● 40km distance	
		Fiber type	Single Mode
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X120 1G SFP LC LH40 1550nm Transceiver (JD062A) A small form-factor pluggable (SFP) Gigabit LH40 transceiver that provides a full-duplex Gigabit solution up to 40 km on a single mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
		Wavelength	1550 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: ● 40km distance	
		Fiber type	Single Mode
	Services	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.	

Accessory Product Details

HP X125 1G SFP LC LH70 Transceiver (JD063B) A small form-factor pluggable (SFP) Gigabit LH70 transceiver that provides a full-duplex Gigabit solution up to 70km on a single-mode fiber.	**Ports**	1 LC 1000BASE-LH port (no IEEE standard exists for 1550 nm optics)	
	Connectivity	Connector type	LC
		Wavelength	1550 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 70km	
		Fiber type	Single Mode
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X120 1G SFP LC SX Transceiver (JD118B) A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550m on a Multimode fiber.	**Ports**	1 LC 1000BASE-SX port	
	Connectivity	Connector type	LC
		Wavelength	850 nm
	Physical characteristics	Dimensions	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	Power consumption typical	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Maximum distance: • FDDI Grade distance = 220m • OM1 = 275m • OM2 = 500m • OM3 = Not Specified by standard	
		Cable length	up to 550m
		Fiber type	Multi Mode
	Services	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.	

Accessory Product Details

HP X120 1G SFP LC LX Transceiver (JD119B) A small form-factor pluggable (SFP) Gigabig LX transceiver that provides a full duplex Gigabit solution up to 550m on MMF or 10Km on SMF	**Ports**	1 SFP 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX)	
	Connectivity	**Connector type**	LC
		Wavelength	1300 nm
	Physical characteristics	**Dimensions**	2.17(d) x 0.6(w) x 0.46(h) in. (5.51 x 1.52 x 1.17 cm)
		Full configuration weight	0.04 lb. (0.02 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: Either single mode or multimode; Maximum distance: • 550m for Multimode • 10km for Singlemode	
		Fiber type	Both
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP X125 1G SFP RJ45 T Transceiver (JD089B) A small form factor pluggable (SFP) Gigabit 1000Base-T transceiver that provides a full duplex Gigabit solution up to 100m on a Cat-5+ cable.	**Ports**	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T)	
	Connectivity	**Connector type**	RJ-45
	Physical characteristics	**Dimensions**	2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm)
		Full configuration weight	0.07 lb. (0.03 kg)
	Electrical characteristics	**Power consumption typical**	0.8 W
		Power consumption maximum	1.0 W
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4-pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T; Maximum distance: • 100m	
	Services	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.	

Accessory Product Details

To learn more, visit: www.hp.com/networking