Product overview

The HPE 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 HPE FlexNetwork architecture’s HPE FlexFabric solution module and are ideally suited for deployments at the server access layer of large enterprise data centers. The HPE 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
- HPE 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 (WRR), SP+WDRR, configurable buffers, Explicit Congestion Notification (ECN), and Weighted Random Early Detection (WRED)
Data center optimized

- **High-performance 10GbE 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 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

- **Higher scalability**
  HPE Intelligent Resilient Framework (IRF) technology simplifies the architecture of server access networks; up to four HPE 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 EVB/VEPA**
  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 Link Layer Discovery**
  Protocol (LLDP) 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 HPE Intelligent Management Center (IMC)

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) HPE IRF technology enables an HPE 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

Address Resolution Protocols (ARP)

Flow Control

Ethernet Link Aggregation

Spanning Tree Protocol (STP)

VLAN support

IGMP support

DHCP support at Layer 2
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

- **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

- **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 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 HPE; to reach our support centers, refer to [hpe.com/networking/support](http://hpe.com/networking/support); for details on the duration of support provided with your product purchase, refer to [hpe.com/networking/warrantysummary](http://hpe.com/networking/warrantysummary)

- **Software releases**
  to find software for your product, refer to [hpe.com/networking/support](http://hpe.com/networking/support); for details on the software releases available with your product purchase, refer to [hpe.com/networking/warrantysummary](http://hpe.com/networking/warrantysummary)
## HPE 5920 Switch Series

### Specifications

#### HPE 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

| **Weight** | 17.32(w) x 25.98(d) x 1.72(h) in (43.99 x 65.99 x 4.37 cm) (1U height)  
28.66 lb (13 kg) |
| **Memory and processor** | 256 MB flash, 2 GB SDRAM, packet buffer size: 3.6 GB |

#### Performance

- **10 Gbps 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 V AC
- **DC voltage**: -36 to -72 VDC
- **Maximum power rating**: 366 W
- **Idle power**: 343 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.

#### Safety


#### Emissions

## HPE 5920 Switch Series

### Specifications (continued)

#### HPE 5920AF-24XG Switch (JG296A)

**Immunity**

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**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 (U1V46E)
- 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)
- 1-year, 6 hour Call-To-Repair Onsite for hardware (U1W00E)
- 1-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone and software updates (U1V60E)

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 5920 Switch Series

### Specifications (continued)

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## HPE 5920 Switch Series accessories

### Transceivers
- HPE X125 1 G SFP LC LH40 1310 nm Transceiver (JD061A)
- HPE X120 1 G SFP LC LH40 1550 nm Transceiver (JD062A)
- HPE X125 1 G SFP LC LH70 Transceiver (JD063B)
- HPE X120 1 G SFP LC BX 10-U Transceiver (JD098B)
- HPE X120 1 G SFP LC BX 10-D Transceiver (JD099B)
- HPE X120 1 G SFP LC SX Transceiver (JD118B)
- HPE X120 1 G SFP LC LX Transceiver (JD119B)
- HPE X120 1 G SFP RJ45 T Transceiver (JD089B)
- HPE X130 10 G SFP+ LC SR Transceiver (JD092B)
- HPE X130 10 G SFP+ LC LRM Transceiver (JD093B)
- HPE X130 10 G SFP+ LC LR Transceiver (JD094B)
- HPE X130 10 G SFP+ LC ER 40 km Transceiver (JG234A)
- HPE X240 10 G SFP+ to SFP+ 0.65 m Direct Attach Copper Cable (JD095C)
- HPE X240 10 G SFP+ to SFP+ 1.2 m Direct Attach Copper Cable (JD096C)
- HPE X240 10 G SFP+ to SFP+ 3 m Direct Attach Copper Cable (JD097C)
- HPE X240 10 G SFP+ to SFP+ 5 m Direct Attach Copper Cable (JG081C)
- HPE X240 10 G SFP+ SFP+ 7 m Direct Attach Copper Cable (JC784C)

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

### Fan Tray
- HPE 5920AF-24XG Back (power-side) to Front (port-side) Airflow Fan Tray (JG297A)
- HPE 5920AF-24XG Front (port-side) to Back (power-side) Airflow Fan Tray (JG298A)

Learn more at [hpe.com/networking](http://hpe.com/networking)