Have feedback on QuickSpecs? We're listening

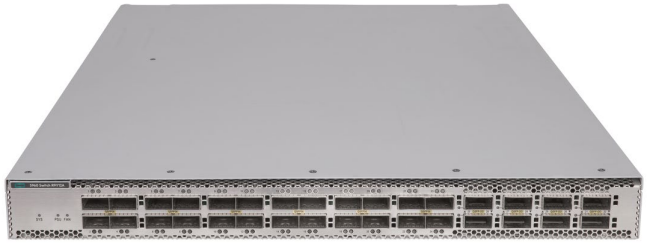
# HPE Networking Comware Switch Series 5960 QuickSpecs

## The HPE Networking Comware Switch Series 5960 are high-density, high-performance top-of-rack (ToR) switches suited for deployment at the core and aggregation layer of enterprise data centers, large cloud service providers, and telco environments.

These switches offer multiple connectivity options with high-density 400G connectivity and are backward compatible with the widely used 100G QSFP28 ports. Switching capacity of 12.8 Tbps and redundant hot-swappable power supplies offer exceptional performance with improved power savings. VXLAN/EVPN and DRNI lead to improved scalability and resiliency. Enhanced software features such as MPLS running with the latest OS Comware v9 enables a dynamic and highly available network.

## Overview

HPE Intelligent Management Center (IMC) support on these switches provides a consistent network manageability experience through centralized configuration, compliance, policy management, monitoring, and troubleshooting. The HPE Networking Comware Switch Series 5960 also supports HPE IMC Orchestrator and Analyzer for DC fabric orchestration and application telemetry.



**HPE Networking Comware Switch 24p QSFP28 100G 8p QSFP-DD 400G 5960 (R9Y12A)**



**HPE Networking Comware Switch 32p QSFP-DD 400G 5960 (R9Y13A)**



**HPE Networking Comware Switch 48p SFP28 25G 8p QSFP-DD 400G 5960 (S7U88A)**

## Key features

- High-performance, high-density, and backward-compatible switch with varied 400/200/100G connectivity options
- New-generation OS Comware v9 offering enhanced software features such as Segment Routing MPLS, egress ACL, egress rate limiting, and others for highly distributed environments
- Dual, redundant, hot-swappable power supplies maintain a dynamic and highly available network
- Supports HPE IMC for a consistent network manageability experience; integrates with HPE IMC Orchestrator and Analyzer for DC fabric orchestration, monitoring, and application telemetry

Standard Features

## Features and Benefits

Consistent and advanced data center switches with flexible connectivity options

- The HPE Networking Comware Switch Series 5960 offers multiple connectivity options of 10/25/40/100/200/400G with three SKUs
  - A high-density 32 x 400GbE QSFP-DD switch
  - A highly flexible 24x100/200G + 8x400G QSFP-DD switch that is backward compatible with the widely used 100G QSFP28 ports
  - A high-density 48x25G + 8 x 400G QSFP-DD switch
- **Comware v9 Operating System:** Supports the new-generation Comware v9 OS, which offers enhanced features—including MPLS and hardware-based BFD—for highly distributed environments built on a modular and open architecture. It supports containerized deployment and allows running third-party applications.
- **Network Virtualization:** Leverages VXLAN/EVPN to deliver network virtualization and overlay solutions for improved flexibility
- **Distributed Resilient Network Interconnect (DRNI):** Supports DRNI, which combines multiple physical switches into a single virtual distributed-relay (DR) system to double aggregate bandwidth while ensuring fast forwarding, resiliency, and high availability
- **Lossless AI Fabric:** Supports RoCEv2, PFC, and ECN to enable a lossless AI fabric.

### High-Performance Data Center Switching

- The HPE Networking Comware Switch Series 5960 supports redundant, hot-swappable power modules and varied fan speeds to meet the actual demands, thereby, ensuring a dynamic and highly available network
- Delivers up to 25.6 Tbps switching capacity for demanding data center applications
- Low latency, under 1 µs delivering increased network throughput
- Uses programmable chips that improve flexibility and aid in network expansion by defining forwarding logic and developing new features as per user needs through simple software upgrades

### Rich Quality of Service (QoS) Features

- The HPE Networking Comware Switch Series 5960 supports Layer 2 to Layer 4 packet filtering for traffic classification based on source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN
- Supports committed access rate (CAR) and line rate for anomaly detection and troubleshooting
- Provides extensive traffic prioritization with strict priority (SP) queuing, weighted round robin (WRR), SP+WRR, WFQ, and SP+WFQ

### Improved Visibility and Simplified Management

- The HPE Networking Comware Switch Series 5960 supports operations, administration, and maintenance (OAM) for improved manageability
- These switches can send real-time information, statistics, and RDMA notifications to the data center operation and maintenance platform through ERSPAN and gRPC protocols, thereby enabling improved visibility
- Supports real-time analysis, troubleshooting, and risk warning to improve network performance and ensure business continuity
- Uses multiple access methods including SNMPv1/v2c/v3, Telnet, SSH 2.0, SSL, and FTP to monitor essential network functions; and supports events, alarm, history, and statistics group plus a private alarm extension group

## Standard Features

- Supports centralized configuration, compliance and policy management, monitoring, and troubleshooting with HPE IMC to provide a consistent network manageability experience; for DC fabric orchestration and application telemetry, this switch supports HPE IMC Orchestrator and Analyzer

# Warranty and support

- **1-year warranty**
  See Warranty and support summary for details on what is 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 Warranty and support summary

Configuration Information

# BTO Models

### BTO Switch Enclosures

| Description | SKU |
|---|---|
| HPE Networking Comware Switch 48p SFP28 25G 8p QSFP-DD 400G 5960 | S7U88A |
| HPE Networking Comware Data Center Switch 24-port 100/200G QSFP56 8-port 400G QSFP-DD 5960 | R9Y12A |
| HPE Networking Comware Data Center Switch 32-port 400G QSFP-DD 5960 | R9Y13A |

# Rack Level Integration CTO Models

### CTO Switch Chassis

| Description | SKU |
|---|---|
| HPE Networking Comware Switch 48p SFP28 25G 8p QSFP-DD 400G 5960<br>– 8 QSFP28/QSFP-DD 100G/400G ports (min=0 \ max=8)<br>– 48 SFP+/SFP28 10/25G ports (min=0 \ max=48)<br>– 1 RJ45 Management Port<br>– 1 Console port<br>– 1 USB2.0 port<br>– 2 Power Supply Slots (Min 1 required)<br>– 6 Fan Tray Slots (Min 6 required)<br>– 1U - Height | S7U88A |
| HPE Networking Comware Data Center Switch 24-port 100/200G QSFP56 8-port 400G QSFP-DD 5960<br>– 24 QSFP+/QSFP28 40/100G ports (min=0 \ max=24)<br>– 8 QSFP28/QSFP-DD 100G/400G ports (min=0 \ max=8)<br>– 1 RJ45 Management Port<br>– 1 Console port<br>– 1 USB2.0 port<br>– 2 Power Supply Slots (Min 1 required)<br>– 6 Fan Tray Slots (Min 6 required)<br>– 1U - Height | R9Y12A |
| HPE Networking Comware Data Center Switch 32-port 400G QSFP-DD 5960<br>– 32 QSFP+/QSFP28/QSFP-DD 40G/100G/400G ports (min=0 \ max=32)<br>– 2 SFP/SFP+ 1/10G ports (min=0 \ max=2)<br>– 1 RJ45 Management Port<br>– 1 Console port<br>– 1 USB2.0 port<br>– 2 Power Supply Slots (Min 1 required)<br>– 6 Fan Tray Slots (Min 6 required)<br>– 1U - Height | R9Y13A |

## Configuration Information

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

# Switch Options

### Transceivers

#### SFP Transceivers

| Description | SKU |
|---|---|
| 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 LH100 Transceiver | JD103A |

#### SFP+ Transceivers

| Description | SKU |
|---|---|
| HPE Networking X130 10G SFP+ LC BiDi 10km-Uplink Transceiver | JL737A |
| HPE Networking X130 10G SFP+ LC BiDi 10km-Downlink Transceiver | JL738A |
| HPE Networking X130 10G SFP+ LC BiDi 40km-Uplink Transceiver | JL739A |
| HPE Networking X130 10G SFP+ LC BiDi 40km-Downlink Transceiver | JL740A |
| HPE Networking X130 10G SFP+ LC SR Transceiver | JD092B |
| HPE Networking X130 10G SFP+ LC LR Transceiver | JD094B |
| HPE Networking X130 10G SFP+ LC LH 80km Transceiver | JG915A |
| HPE Networking X2A0 10G SFP+ to SFP+ 7m Active Optical Cable | JL290A |
| HPE Networking X2A0 10G SFP+ to SFP+ 10m Active Optical Cable | JL291A |
| HPE Networking X2A0 10G SFP+ to SFP+ 20m Active Optical Cable | JL292A |
| 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 |

#### SFP28 Transceivers

| Description | SKU |
|---|---|
| HPE Networking Comware 25G CSR SFP28 LC 300m MM Transceiver | S4J91A |
| HPE Networking X190 25G SFP28 LC SR 100m MM Transceiver | JL293A |
| HPE Networking 25G SFP28 LC LR 10km SMF Transceiver | JL855A |
| HPE Networking X240 25G SFP28 to SFP28 1m DAC Cable | JL294A |
| HPE Networking X240 25G SFP28 to SFP28 3m DAC Cable | JL295A |
| HPE Networking X240 25G SFP28 to SFP28 5m DAC Cable | JL296A |
| HPE Networking X2A0 25G SFP28 to SFP28 3m Active Optical Cable | JH955A |
| HPE Networking X2A0 25G SFP28 to SFP28 5m Active Optical Cable | JH956A |
| HPE Networking X2A0 25G SFP28 to SFP28 7m Active Optical Cable | JL297A |
| HPE Networking X2A0 25G SFP28 to SFP28 10m Active Optical Cable | JL298A |
| HPE Networking X2A0 25G SFP28 to SFP28 20m Active Optical Cable | JL299A |
| HPE Networking Comware 25G SFP28 to SFP28 2m Direct Attach Copper Cable | S7P36A |

## Configuration Information

**QSFP+ Transceivers**

| Description | SKU |
|---|---|
| HPE Networking X140 40G QSFP+ MPO SR4 Transceiver | JG325B |
| HPE Networking X140 40G QSFP+ CSR4 300m Transceiver | JG709A |
| HPE Networking X140 40G QSFP+ LC BiDi 100m MM Transceiver | JL251A |
| 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 X140 40G QSFP+ LC ER4 40km SM Transceiver | JL306A |
| HPE Networking Comware 40G PLR4 QSFP+ 10km Transceiver | S4J93A |
| 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 |
| 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 |
| 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 |

**QSFP28 Transceivers**

| Description | SKU |
|---|---|
| HPE Networking X150 100G QSFP28 MPO SR4 100m MM Transceiver | JL274A |
| HPE Networking X150 100G QSFP28 LC SWDM4 100m MM Transceiver | JH419A |
| HPE Networking X150 100G QSFP28 LC BiDi 100m MM Transceiver | JQ344A |
| HPE Networking X150 100G QSFP28 eSR4 300m MM Transceiver | JH672A |
| HPE Networking X150 100G QSFP28 PSM4 500m SM Transceiver | JH420A |
| HPE Networking X150 100G QSFP28 LC LR4 10km SM Transceiver | JL275A |
| HPE Networking X150 100G QSFP28 CWDM4 2km SM Transceiver | JH673A |
| HPE Networking Comware 100G FR1 QSFP28 LC 2km SMF Transceiver | S2P29A |
| HPE Networking Comware 100G DR QSFP28 LC 500m SM Transceiver | S4J89A |
| HPE Networking X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable | JL276A |
| HPE Networking X2A0 100G QSFP28 to QSFP28 10m Active Optical Cable | JL277A |
| HPE Networking X2A0 100G QSFP28 to QSFP28 20m Active Optical Cable | JL278A |
| HPE Networking X240 100G QSFP28 1m DAC Cable | JL271A |
| HPE Networking X240 100G QSFP28 3m DAC Cable | JL272A |
| HPE Networking X240 100G QSFP28 5m DAC Cable | JL273A |
| HPE Networking X240 QSFP28 4xSFP28 1m Direct Attach Copper Cable | JL282A |
| HPE Networking X240 QSFP28 4xSFP28 3m Direct Attach Copper Cable | JL283A |
| HPE Networking X240 QSFP28 4xSFP28 5m Direct Attach Copper Cable | JL284A |
| HPE Networking X2A0 100G QSFP28 5m Active Optical Cable | JL796A |
| HPE Networking X2A0 100G QSFP28 30m Active Optical Cable | JL795A |

Configuration Information

**QSFP-DD Transceivers**

| Description | SKU |
|---|---|
| HPE Networking Comware 400G DR4 QSFP-DD MPO 500m SM Transceiver | S4J85A |
| HPE Networking Comware 400G LR4 WDM QSFP-DD LC 10km Transceiver | S4J87A |
| HPE Networking Comware 400G ZR QSFP-DD LC 120km Tunable Transceiver | S4M22A |
| HPE Networking X1E0 400G QSFP-DD SR8 MM850 100m OM4 MPO16/APC Transceiver | R9J29A |
| HPE Networking X1E0 400G QSFP-DD FR4-WDM1300 2km LC Transceiver | R9J30A |
| HPE Networking X1E0 400G QSFP-DD to QSFP-DD 2m Passive Cable | R9J28A |
| HPE Networking Comware 1xQSFP-DD 400G to 4xQSFP56 100G 2x50G PAM4 2.5m Split Direct Attach Cable | S0E49A |
| HPE Networking Comware 1xQSFP-DD 400G to 8xSFP56 50G 2.5m Split Direct Attach Cable | S0P73A |
| HPE Networking Comware 400G QSFP-DD to 2x QSFP56 200G 5m Active Optical Cable | S4J99A |
| HPE Networking Comware 400G QSFP-DD to 2x QSFP56 200G 10m Active Optical Cable | S4K00A |
| HPE Networking Comware 400G QSFP-DD to 2x QSFP56 200G 20m Active Optical Cable | S4K01A |
| HPE Networking Comware 400G QSFP-DD to QSFP-DD 5m Active Optical Cable | S6H75A |
| HPE Networking Comware 400G QSFP-DD to QSFP-DD 10m Active Optical Cable | S6H76A |
| HPE Networking Comware 400G QSFP-DD to QSFP-DD 20m Active Optical Cable | S6H77A |
| HPE Networking Comware 400G QSFP-DD to QSFP-DD 30m Active Optical Cable | S6H78A |
| HPE Networking Comware 400G QSFP-DD to 4x QSFP56 100G 5m Active Optical Cable | S6H79A |
| HPE Networking Comware 400G QSFP-DD to 4x QSFP56 100G 10m Active Optical Cable | S6H80A |

## Internal Power Supplies

| Description | SKU |
|---|---|
| HPE Networking Comware 5960 400G 1600W AC Power Supply Unit | R9Y18A |
| HPE Networking Comware 5960 400G 1600W AC Power Supply Unit PDU | R9Y18A#B2B |
| HPE Networking Comware 5960 400G 1600W AC Power Supply Unit PDU | R9Y18A#B2C |
| HPE Networking Comware 5960 400G 1600W AC Power Supply Unit No Loc | R9Y18A#AC3 |
| HPE Networking Comware 5960 400G 48VDC 2400W Power Supply Unit | R9Y19A |

## Fan Trays

| Description | SKU |
|---|---|
| HPE Networking Comware Module 400G Port Side to Power Supply Side Airflow Fan 5960 | R9Y16A |
| HPE Networking Comware Module 400G Power Supply Side to Port Side Airflow Fan 5960 | R9Y17A |

## Software

**IMC**

**Orchestrator**

| Description | SKU |
|---|---|
| HPE Networking IMC Orchestrator Base License E-LTU | JL849AAE |
| HPE Networking IMC Orchestrator Analyzer Add-on License E-LTU | JL850AAE |
| HPE Networking IMC Orchestrator Network Node Add-on License E-LTU | JL851AAE |
| HPE Networking IMC Orchestrator Analyzer IP Host Add-on License E-LTU | JL852AAE |

## Technical Specifications

| HPE NW CW 5960 24x100G/200G+ 8x400GQDD Sw (R9Y12A) | |
|---|---|
| **I/O ports and slots** | 1 I/O module slot Supports a max of 24x100G/200G QSFP56/ QSFP28 ports, 8x400G QDD ports |
| **Additional ports and slots** | 1 console port, 1 out of band management port, 1 USB port |
| **Power modules and slots** | 2 power supply slots. 1 minimum power supply required (ordered separately) |
| **Fan tray** | 6 hot swappable fans |
| **Physical Characteristics** | |
| **Dimensions (HxWxD)** | 44 mm x 440 mm x 460 mm |
| **Weight** | ≤ 13.5 kg |
| **Memory and processor** | D-1627 @ 2.9 GHz, 16G DDR4, 240G SSD |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only |
| **Performance** | |
| **Latency** | <1µs |
| **Switching capacity** | 16Tbps |
| **Forwarding capacity** | 268 Bps |
| **MAC address table size** | 32K (Route mode) 224K(MAC mode) |
| **Routing table size** | IPv4<br>97500 (MAC mode)<br>980000(24B)/ 1000000(32B) (Routing mode)<br>IPv6<br>97500 (MAC mode)<br>1000000 (80B/128B) (Routing mode) |
| **ARP table size** | 28K |
| **Operating temp** | 0°C to 40°C |
| **Operating relative humidity** | 5% to 95%, noncondensing |
| **Non-operating/storage temp** | –40°F to 158°F (–40°C to 70°C) |
| **Non-operating/storage relative humidity** | 5% to 95%, noncondensing |
| **Acoustic** | 59.5 dB at 40% Fan Speed<br>72.3 dB at 70% Fan Speed<br>79.6 dB at 100% Fan Speed |
| **Airflow direction** | From front to rear |
| **Electrical Characteristics** | |
| **Frequency** | 50/60 Hz |
| **Maximum heat dissipation** | 2552 BTU/h |
| **Current** | 70A (12V) |
| **Voltage** | DC—Input Voltage 180V to 320V<br>AC—Input Voltage 100V to 240V |
| **Maximum power rating** | 748W |
| **Idle power** | Dual AC 146W |
| | **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 |

## Technical Specifications

| | |
|---|---|
| | infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. |
| **Safety** | UL 60950-1<br>CAN/CSA C22.2 No 60950-1<br>IEC 60950-1AS/NZS 60950-1<br>FDA 21 CFR Subchapter J GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1, EN 62368-1<br>AS/NZS 62368-1 |
| **Emissions** | FCC Part 15 SubpartB CLASS A<br>ICES-003 CLASS A VCCI CLASS A<br>CISPR 32 CLASS A<br>EN 55032 CLASS A<br>AS/NZS CISPR 32 CLASS A<br>CISPR 35EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386 |
| **Telecom** | |
| **Management** | IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP. |
| | **Notes:** The customer must install a minimum of one power supply, as the device does not come with one. The customer must install six fan kits, as the device does not come with one. |
| **Services** | Refer to the Hewlett Packard Enterprise 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 Hewlett Packard Enterprise sales office |

| **HPE NW CW 5960 32x400G QSFP-DD Sw (R9Y13A)** | |
|---|---|
| **I/O ports and slots** | 1 I/O module slot Supports a max of 32 400G QSFP-DD ports and 2 SFP+ ports |
| **Additional ports and slots** | 1 console port, 1 out of band management port, 1 USB port |
| **Power modules and slots** | 2 power supply slots. 1 minimum power supply required (ordered separately) |
| **Fan tray** | 6 hot swappable fans |
| **Physical Characteristics** | |
| **Dimensions (HxWxD)** | 44 mm x 440 mm x 660 mm |
| **Weight** | ≤ 12.2 kg |
| **Memory and proc** | D-1627 @ 2.9 GHz, 16G DDR4, 240G SSD |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only |
| **Performance** | |
| **Latency** | <1 µs |
| **Switching capacity** | 25.6Tbps |
| **Forwarding capacity** | 353 Bps |
| **MAC address table size** | 32K (Route mode) 224K(MAC mode) |

## Technical Specifications

| | |
|---|---|
| **Routing table size** | IPv4<br>196000 (MAC mode)<br>980000 (24B)/ 1000000 (32B) (Routing mode)<br>IPv6<br>196000 (MAC mode)<br>1000000 (80B/128B) (Routing mode) |
| **ARP table size** | 28K |
| **Operating temp** | 0°C to 40°C |
| **Operating relative humidity** | 5% to 95%, noncondensing |
| **Non-operating/storage temp** | –40°F to 158°F (–40°C to 70°C) |
| **Non-operating/storage relative humidity** | 5% to 95%, noncondensing |
| **Acoustic** | 60.3 dB at 40% Fan Speed<br>73.2 dB at 70% Fan Speed<br>78.9 dB at 100% Fan Speed |
| **Airflow direction** | From front to rear |
| **Electrical Characteristics** | |
| **Frequency** | 50/60 Hz |
| **Maximum heat dissipation** | 3890 BTU/h |
| **Current** | 70A (12V) |
| **Voltage** | DC—Input Voltage 180 V to 320 V<br>AC—Input Voltage 100 V to 240 V |
| **Maximum power rating** | 1140 W |
| **Idle power** | Dual AC 168W |
| | **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<br>CAN/CSA C22.2 No 60950-1<br>IEC 60950-1AS/NZS 60950-1<br>FDA 21 CFR Subchapter J GB 4943.1<br>UL 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1, EN 62368-1<br>AS/NZS 62368-1 |
| **Emissions** | FCC Part 15 SubpartB CLASS A<br>ICES-003 CLASS A<br>VCCI CLASS ACISPR 32 CLASS A<br>EN 55032 CLASS A<br>AS/NZS CISPR 32 CLASS A<br>CISPR 35EN 55035<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386 |

## Technical Specifications

| Telecom | |
|---|---|
| **Management** | IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP.<br>**Notes:** The customer must install a minimum of one power supply, as the device does not come with one. The customer must install six fan kits, as the device does not come with one. |
| **Services** | Refer to the Hewlett Packard Enterprise 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 Hewlett Packard Enterprise sales office |

Technical Specifications

| HPE NW CW Sw 48Y 8D 5960 (S7U88A) | |
|---|---|
| **I/O ports and slots** | 1 I/O module slot Supports a max of 48 25G SFP28 ports and 8 400G QSFP-DD ports |
| **Additional ports and slots** | 1 console port, 1 out of band management port-copper, 1 USB port |
| **Power modules and slots** | 2 power supply slots. 1 minimum power supply required (ordered separately) |
| **Fan tray** | 6 hot swappable fans |
| **Physical Characteristics** | |
| **Dimensions (HxWxD)** | 44 mm × 440 mm × 660 mm |
| **Weight** | ≤ 12.2KG |
| **Memory and proc** | Intel Xeon D-1627 4core@2.9GHz 16G DDR4, 240G SSD |
| **Mounting and enclosure** | Mounts in an EIA standard 19-inch rack or other equipment cabinet (hardware included); horizontal surface mounting only |
| **Performance** | |
| **Latency** | <1.2us |
| **Switching capacity** | 8 Tbps |
| **Forwarding capacity** | 2.7 BPPS |
| **MAC address table size** | 32K (Route mode) 224K(MAC mode) |
| **Routing table size** | IPv4<br>Routing mode 224K<br>Mac mode 32K<br>IPv6<br>Routing mode 1M |
| **ARP table size** | 28K |
| **Environment** | |
| **Operating temp** | 0°C to 40°C |
| **Operating relative humidity** | 5% to 95%, noncondensing |
| **Non-operating/storage temp** | -40°F to 158°F (-40°C to 70°C) |
| **Non-operating/storage relative humidity** | 5% to 95%, noncondensing |
| **Acoustic** | 59.5dB(A) |
| **Airflow direction** | From front to rear |
| **Electrical Characteristics** | |
| **Frequency** | 50/60 Hz |
| **Maximum heat dissipation** | 2453 BTU/h |
| **Current** | 70A (12V) |
| **Voltage** | DC—Input Voltage 180 V to 320 V<br>AC—Input Voltage 100 V to 240 V |
| **Maximum power rating** | 1600W (Max) |
| **Idle power** | Single power supply — 713W<br>Dual power supplies — 719W |
| | **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 62368-1<br>CAN/CSA C22.2 No 62368-1<br>IEC 62368-1, EN 62368-1<br>AS/NZS 62368-1<br>FDA 21 CFR Subchapter J<br>GB 4943.1 |
| **Emissions** | FCC Part 15 Subpart B CLASS A<br>ICES-003 CLASS A<br>VCCI CLASS A<br>CISPR 32 CLASS A<br>EN 55032 CLASS A<br>AS/NZS CISPR32 CLASS A<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>GB/T 9254.1 |
| **Telecom** | |
| **Management** | IMC; CLI; out-of-band management; SNMP Manager; Telnet; FTP.<br>**Notes:** The customer must install a minimum of one power supply, as the device does not come with one. The customer must install six fan kits, as the device does not come with one. |
| **Services** | Refer to the Hewlett Packard Enterprise 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 Hewlett Packard Enterprise sales office |

## Standards and Protocols

| Item | Standards |
|---|---|
| **Forwarding mode** | Store-forward |
| **Virtualization** | Distributed device management<br>Distributed link aggregation<br>Distributed resilient routing |
| **Link aggregation** | 100GbE/200GbE/400GbE port aggregation<br>Static aggregation, dynamic aggregation |
| **Data center** | VXLAN<br>VXLAN DCI<br>802.1Qbb PFC, 802.1Qaz ETS, ECN, DCBX<br>EVPN distributed gateway<br>NETCONF, Python<br>RDMA, RoCE |

## Technical Specifications

| | |
|---|---|
| **Jumbo frame** | Supported |
| **MAC address table** | Static MAC address<br>MAC address |
| **VLAN** | Port-based VLAN (quantity: 4094)<br>Default VLAN |
| **Traffic monitoring** | sFlow®/NetStream |
| **DHCP** | DHCP client<br>DHCP snooping/DHCP relay<br>DHCP snooping support for Option 82/DHCP relay agent support for Option 82<br>IPv6 DHCP client<br>DHCP relay |
| **ARP** | Gratuitous ARP Dynamic<br>ARP source-suppression<br>ARP |
| **IP routing** | Static routing, OSPFv1/v2/v3, BGP,<br>IS-IS ECMP, VRRP, policy-based routing BGP4+ for IPv6,<br>VRRP, IPv6 policy-based routing OSPFv3, ISISv6 |
| **IPv6** | IPv6 ND<br>ICMPv6, Telnetv6, SFTPv6, SNMP over IPv6, BFDv6, VRRPv3<br>IPv6 tunnel |
| **Zero touch provisioning (ZTP)** | Auto-config |
| **MPLS** | L3VPN<br>VPLS<br>MPLS L3VPN<br>MPLS L2VPN (Martini, Kompella)<br>LDP<br>VPLS<br>QinQ, Supports P/PE Function |
| **Segment Routing (Supported with 5960R)** | MPLS SR, TI-LFA FRR<br>MPLS TE policy, SRv6<br>EVPN VPLS over SRv6<br>EVPN VPWS over SRv6<br>MPLS L3VPN over SRv6<br>EVPN L3VPN over SRv6 |
| **MSTP** | STP/RSTP/MSTP<br>PVST+/RPVST+<br>STP root guard<br>BPDU guard |

## Technical Specifications

| | |
|---|---|
| **QoS/ACL** | Inbound and outbound traffic rate limit<br>Committed Access Rate (CAR)<br>Eight output queues on each port<br>Flexible port and queue-based queuing and scheduling algorithms<br>SP, WRR, WFQ, SP+WRR, and SP+WFQ queuing<br>802.1p and DSCP priority remarking<br>Packet filtering at Layer 2 to Layer 4<br>Traffic classification based on source MAC address, destination MAC address, source IPv4/IPv6 address, destination IPv4/IPv6 address, port number, protocol type, and VLAN<br>Time range-based ACL<br>Bi-directional ACLs (inbound and outbound)<br>ACLs VLAN-based ACL assignment<br>WRED |
| **Mirroring** | Traffic mirroring<br>N:4 port mirroring<br>Local port mirroring, remote port mirroring<br>Multiple remote mirroring ports (reflector port) |
| **LACP** | LACP<br>LACP local forwarding first<br>LACP short time<br>LACP stack split detection |
| **Security** | Hierarchical user management and password protection<br>AAA/RADIUS/HWTACACS<br>MACsec (only supported with 5960R)<br>SSH 2.0<br>HTTPS/SSL PKI |
| **LLDP** | LLDP<br>LLDP-MED |
| **Loading and upgrading** | Loading/upgrading through the XMODEM protocol<br>Loading/upgrading through FTP and TFTP |
| **Management and maintenance** | Configuration via CLI, Telnet, and console port scheduled job<br>SNMPv1/v2c/v3<br>Telemetry<br>gRPC<br>HPE IMC<br>System logs<br>Hierarchical alarms<br>NTP, SNTP<br>Power, fan, and temperature alarms<br>Debugging information output<br>Ping and traceroute<br>File uploading and downloading through the USB port |

## Technical Specifications

| | |
|---|---|
| **Safety** | UL 60950-1<br>CAN/CSA C22.2 No. 60950-1<br>IEC 60950-1, EN 60950-1<br>AS/NZS 60950-1<br>FDA 21 CFR Subchapter J<br>GB 4943.1 |
| **EMC** | FCC Part 15 Subpart B CLASS A<br>ICES-003 CLASS A<br>VCCI CLASS A<br>CISPR 32 CLASS A<br>EN 55032 CLASS A<br>AS/NZS CISPR 32 CLASS A<br>CISPR 24<br>EN 55024<br>EN 61000-3-2<br>EN 61000-3-3<br>ETSI EN 300 386<br>GB/T 9254<br>YD/T 993 |

## Summary of Changes

| Date | Version History | Action | Description of Change |
|---|---|---|---|
| 19-Oct-2026 | Version 14 | Changed | Survey link text was updated. |
| 08-Sep-2026 | Version 13 | Changed | 5960 48Y8D image added in Overview section, SKUs added in Configuration Information section. |
| 15-Jun-2026 | Version 12 | Changed | Format changes in Configuration Information section. |
| 05-Jan-2026 | Version 11 | Changed | Rebrand applied to QuickSpecs |
| 21-July-2025 | Version 10 | Changed | Survey link updated |
| 27-May-2025 | Version 9 | Changed | Switching capacity was updated for R9Y12A and R9Y13A in Technical Specifications. |
| 05-May-2025 | Version 8 | Changed | Configuration Information section was updated. |
| 02-Dec-2024 | Version 7 | Changed | Configuration Information section was updated. |
| 04-Nov-2024 | Version 6 | Changed | Standard Features and Configuration Information sections were updated. |
| 05-Aug-2024 | Version 5 | Changed | Technical Specifications section was updated. |
| 06-May-2024 | Version 4 | Changed | Configuration Information section was updated. |
| 20-Nov-2023 | Version 3 | Changed | Technical Specifications section was updated. |
| 07-Aug-2023 | Version 2 | Changed | Overview section was updated. |
| 05-Jun-2023 | Version 1 | New | New QuickSpecs |

# Copyright

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