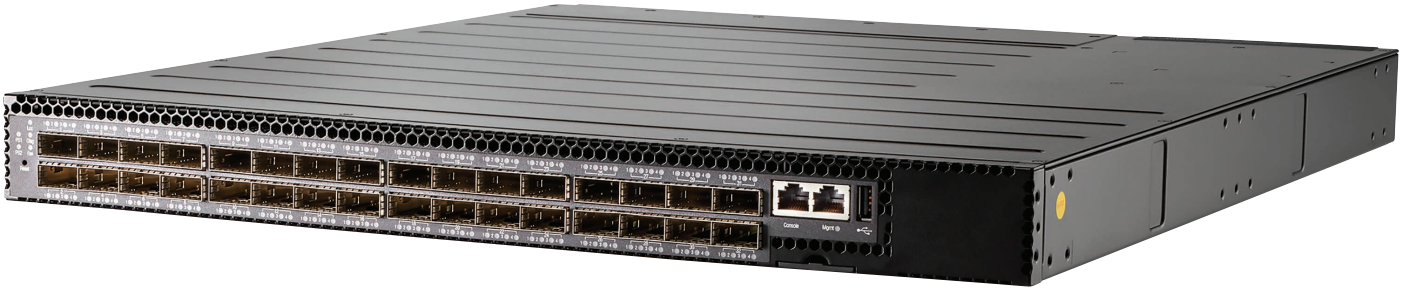
Hewlett Packard Enterprise

# HPE Altoline 6960 Switch Series



**Key features**

- High 100GbE port density and low latency for demanding applications
- Open Network Install Environment (ONIE) boot loader for choice of network OS and easy installation
- Open-networking and disaggregated solution for customer choice
- VXLAN for efficient network virtualization overlay solutions
- x86 CPU, 100GbE, and redundant fans and power supplies for data center deployments

## Product overview

- HPE Altoline 6960 Switch Series are top-of-rack (ToR) or spine switches for high-performance data centers. In a compact 1RU form factor, the switch provides line-rate L2 and L3 switching across up to 32 x QSFP28 ports, supporting 25GbE server connections as a ToR switch, or 100GbE spine interconnects as a spine switch.
- The 32 fixed QSFP28 ports support up to 32 x 100GbE connections.
- HPE Altoline 6960 Switch Series are bare-metal switches loaded with ONIE, which supports the installation of compatible independent switch OS offerings.

## Features and benefits

**Data center optimized**

- **Flexible high-port density**
  HPE Altoline 6960 Switch Series enables scaling of the server edge with 100GbE spine and ToR deployments to new heights with high-density 32-port solutions delivered in a 1RU design. Up to 32 100GbE QSFP28 ports can also be configured as four 25GbE ports by using a 100GbE-to-25GbE splitter cable providing up to 128 25GbE ports
- **High-performance switching**
  Cut-through and nonblocking architecture delivers low latency (600–720 nanosecond for 100GbE) for very demanding enterprise applications; the switch delivers high-performance switching capacity and wire-speed packet forwarding

- **Hot/cold aisle support**
  Models available with front-to-back (port-to-power) or back-to-front (power-to-port) airflow
- **Redundant fans and power supplies**
  1+1 internal redundant and hot-pluggable power supplies and N+1 redundant fan trays enhance reliability and availability
- **VXLAN hardware support**
  Supports VXLAN VTEP overlay technologies

**Manageability**

- **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
- **ONIE bootloader**
  Switch is loaded with ONIE software installer
- **Intel® x86 CPU**
  Provides high-performance support of widely available, industry-standard software and utilities

**Layer 2 switching**

- VLAN support
- Provides support for 4,096 VLAN IDs

**Additional information**

- Low-power consumption
- Typical operation uses just 267 W of AC power

**Warranty and support**

- **1-year warranty**
  See **hpe.com/networking/warrantysummary** for warranty and support information included with your product purchase.
- **Software releases**
  To find software for your product, refer to **hpe.com/networking/support**; for details on the software releases available with your product purchase, refer to **hpe.com/networking/warrantysummary**.

| | HPE Altoline 6960 32QSFP28 x86 ONIE AC Front-to-Back Switch (JL279A) | HPE Altoline 6960 32QSFP28 x86 ONIE AC Back-to-Front Switch (JL280A) |
|---|---|---|
| **I/O ports and slots** | 32 QSFP28 100GbE ports | 32 QSFP28 100GbE ports |
| **Additional ports and slots** | 1 RJ-45 serial console port<br>1 RJ-45 out-of-band management port<br>1 USB 2.0 | 1 RJ-45 serial console port<br>1 RJ-45 out-of-band management port<br>1 USB 2.0 |
| **Power supplies** | 2 power supply slots<br>1 minimum power supply required includes: 2 x PSUs | 2 power supply slots<br>1 minimum power supply required includes: 2 x PSUs |
| **Fan tray** | 5 fan tray slots<br>Switch comes with five (5) fan trays (port to power airflow) | 5 fan tray slots<br>Switch comes with five (5) fan trays (power to port airflow) |
| **Physical characteristics** | | |
| Dimensions | 17.26(w) x 20.28(d) x 1.73(h) in. (43.84 x 51.50 x 4.4 cm) | 17.26(w) x 20.28(d) x 1.73(h) in. (43.84 x 51.50 x 4.4 cm) |
| Weight | 18.52 lb (8.4 kg) | 18.52 lb (8.4 kg) |
| **Memory and processor** | Intel Rangeley C2538 4-core @ 2.4 GHz, 8 GB DDR3 SDRAM;<br>Storage: mSATA: 32 GB; Packet buffer size: 12 MB, 8 GB NAND flash | Intel Rangeley C2538 4-core @ 2.4 GHz, 8 GB DDR3 SDRAM;<br>Storage: mSATA: 32 GB; Packet buffer size: 12 MB, 8 GB NAND flash |
| **Performance** | | |
| Routing/Switching capacity | 3.2 Tbps | 3.2 Tbps |
| MAC address table size | 8000 entries | 8000 entries |
| **Environment** | | |
| Operating temperature | 32°F to 113°F (0°C to 45°C) | 32°F to 104°F (0°C to 40°C) |
| Operating relative humidity | 5% to 95%, noncondensing | 5% to 95%, noncondensing |
| Nonoperating/Storage temperature | -40°F to 158°F (-40°C to 70°C) | -40°F to 158°F (-40°C to 70°C) |
| Altitude | Up to 10,000 ft (3 km) | Up to 10,000 ft (3 km) |
| Acoustic | Power: 62 dB | Power: 62 dB |
| **Electrical characteristics** | | |
| Frequency | 50/60 Hz | 50/60 Hz |
| Voltage | 90–264 VAC, rated (depending on power supply chosen) | 90–264 VAC, rated (depending on power supply chosen) |
| Maximum power rating | 315 W | 315 W |
| Idle power | 267 W<br>Idle power is the actual power consumption of the device with no ports connected. | 267 W<br>Idle power is the actual power consumption of the device with no ports connected. |
| Notes | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded, 100% traffic, all ports plugged in, and all modules populated.<br>PSU Efficiency: Up to 93% for AC PSUs | Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded, 100% traffic, all ports plugged in, and all modules populated.<br>PSU Efficiency: Up to 93% for AC PSUs |
| **Safety** | cUL Certified; EN 60950; EN 55022 Class A; VCCI Class A; RoHS Compliance; FCC Class A: Regulations for Radio Frequency Devices for Electromagnetic Compliance; UL | cUL Certified; EN 60950; EN 55022 Class A; VCCI Class A; RoHS Compliance; FCC Class A: Regulations for Radio Frequency Devices for Electromagnetic Compliance; UL |

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|---|---|---|
| **Emissions** | FCC part 15 Class A; EN 55022 Class A; VCCI | FCC part 15 Class A; EN 55022 Class A; VCCI |
| **Immunity**<br>ESD<br>EFT/Burst | <br>EN 60950<br>IEC 68-2-14 | <br>EN 60950<br>IEC 68-2-14 |
| **Management** | Command-line interface; Out-of-band management; SNMP manager; Telnet; FTP | Command-line interface; Out-of-band management; SNMP manager; Telnet; FTP |
| **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. | 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. |

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