



HPE Altoline 6940 Switch Series



Key features

- High 40GbE port density and low latency for demanding applications
- 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, 40GbE, and redundant fans and power supplies for data center deployments

Product overview

The HPE Altoline 6940 Switch is a top-of-rack (ToR) leaf or spine switch 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 QSFP ports, supporting 10GbE or 40GbE server connections as a ToR leaf switch, or 10GbE or 40GbE spine interconnects as a spine switch.

The 32 fixed QSFP ports support up to 32 x 40GbE connections or 96 x 10GbE with 8 x 40GbE uplink connections.

The HPE Altoline 6940 Switch is a bare-metal switch loaded with the Open Network Install Environment (ONIE), which supports the installation of compatible independent switch network operating system (NOS) offerings.

Features and benefits

Data center optimized

- Flexible high-port density

The HPE Altoline 6940 Switch Series enables scaling of the server edge with 40GbE spine and 10GbE leaf ToR deployments to new heights with high-density 32-port solutions delivered in a 1RU design. Up to 24 40GbE QSFP+ ports can also be configured as four 10GbE ports by using a 40GbE-to-10GbE splitter cable providing up to 96 10GbE ports with eight 40GbE uplinks

- High-performance switching

Cut-through and nonblocking architecture delivers low latency (600–720 nanoseconds for 40GbE) for very demanding enterprise applications; the switch delivers high-performance switching capacity and wirespeed packet forwarding

- Hot or 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 boot loader

The switch is loaded with Open Network Install Environment (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 6940 Switch Series

Specifications	HPE Altoline 6940 32QSFP+ x86 ONIE AC front-to-back switch (JL165A)	HPE Altoline 6940 32QSFP+ x86 ONIE AC back-to-front switch (JL166A)
I/O ports and slots	32 QSFP+ 40GbE ports	32 QSFP+ 40GbE ports
Additional ports and slots	1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 USB 2.0	1 RJ-45 serial console port 1 RJ-45 out-of-band management port 1 USB 2.0
Power supplies	2 power supply slots 1 minimum power supply required includes: 2 x PSUs	2 power supply slots 1 minimum power supply required includes: 2 x PSUs
Fan tray	5 fan tray slots Switch comes with five (5) fan trays (port to power airflow)	5 fan tray slots Switch comes with five (5) fan trays (power to port airflow)
Physical characteristics		
Dimensions	17.32(w) x 18.5(d) x 1.72(h) in. (44.00 x 47.0 x 4.4 cm)	17.32(w) x 18.5(d) x 1.72(h) in. (44.00 x 47.0 x 4.4 cm)
Weight	18.52 lb (8.4 kg)	18.52 lb (8.4 kg)
Memory and processor	Intel Atom C2538 quad-core x86 processor @ 2.4 GHz, 8 GB DDR3 SDRAM; Packet buffer size: 12 MB, 16 GB SD Card	Intel Atom C2538 quad-core x86 processor @ 2.4 GHz, 8 GB DDR3 SDRAM; Packet buffer size: 12 MB, 16 GB SD Card
Performance		
40 Gbps Latency	> .6 μ s	> .6 μ s
Throughput	Up to 1440 Mpps	Up to 1440 Mpps
Routing/Switching capacity	2560 Gbps	2560 Gbps
Routing table size	64000 entries (IPv4), 20000 entries (IPv6)	64000 entries (IPv4), 20000 entries (IPv6)
MAC address table size	320000 entries	320000 entries
Environment		
Operating temperature	32°F to 104°F (0°C to 40°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)
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	267 W
	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. PSU Efficiency: Up to 93% for AC PSUs	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. PSU Efficiency: Up to 93% for AC PSUs

HPE Altoline 6940 Switch Series (continued)

Specifications	HPE Altoline 6940 32QSFP+ x86 ONIE AC front-to-back switch (JL165A)	HPE Altoline 6940 32QSFP+ x86 ONIE AC back-to-front switch (JL166A)
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
Emissions	FCC part 15 Class A; EN 55022 Class A; VCCI	FCC part 15 Class A; EN 55022 Class A; VCCI
Immunity ESD EFT/Burst	EN 60950 IEC 68-2-14	EN 60950 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.

HPE Altoline 6940 Switch Series accessories

Transceivers	<p>HPE X240 40 G QSFP+ to QSFP+ 1 m Direct Attach Copper Cable (JG326A)</p> <p>HPE X240 40 G QSFP+ to QSFP+ 3 m Direct Attach Copper Cable (JG327A)</p> <p>HPE X240 40 G QSFP+ to QSFP+ 5 m Direct Attach Copper Cable (JG328A)</p> <p>HPE X240 40 G QSFP+ to 4x10G SFP+ 1 m Direct Attach Copper Splitter Cable (JG329A)</p> <p>HPE X240 40 G QSFP+ to 4x10G SFP+ 3 m Direct Attach Copper Splitter Cable (JG330A)</p> <p>HPE X240 40 G QSFP+ to 4x10G SFP+ 5 m Direct Attach Copper Splitter Cable (JG331A)</p> <p>HPE X140 40 G QSFP+ LC LR4 SM 10 km 1310 nm Transceiver (JG661A)</p> <p>HPE X140 40 G QSFP+ MPO SR4 Transceiver (JG325B)</p> <p>HPE X140 40 G QSFP+ MPO MM 850 nm CSR4 300 m Transceiver (JG709A)</p>
---------------------	--

Learn more at
hpe.com/networking



Sign up for updates



**Hewlett Packard
Enterprise**

© Copyright 2015–2016 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Intel is a trademark of Intel Corporation in the U.S. and other countries. SD is a trademark or registered trademark of SD-3C in the United States, other countries or both.

4AA5-9069ENW, September 2016, Rev. 2