

Overview

HPE Altoline 6941 Switch Series

Models

HPE Altoline 6941 32QSFP+ x86 ONIE AC Front-to-Back Switch	JL313A
HPE Altoline 6941 32QSFP+ x86 ONIE AC Back-to-Front Switch	JL314A

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 L2 & L3 for efficient network virtualization overlay solutions
- x86 CPU, 40GbE and redundant fans and power supplies for data center deployments

Product overview

The HPE Altoline 6941 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 QSFP ports, supporting 10GbE or 40GbE server connections as a ToR 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 6941 Switch Series are bare-metal switches loaded with the Open Network Install Environment (ONIE), which supports the installation of compatible independent switch OS offerings.

Features and benefits

Data center optimized

- **Flexible high port density**
the HPE Altoline 6941 Switch Series enables scaling of the server edge with 40GbE spine and 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 nanosecond for 40GbE) 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, hot-pluggable power supplies and a fanless design enhance reliability and availability
- **VXLAN hardware support**
supports VXLAN L2 & L3 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

Overview

- **ONIE bootloader**
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 267W of AC power

Warranty and support

- **1-year Warranty**
see <http://www.hpe.com/networking/warrantysummary> for warranty and support information 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 <http://www.hpe.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.

Router Chassis

HPE Altoline 6941 32QSFP+ x86 ONIE AC Front-to-Back Switch	JL313A
<ul style="list-style-type: none"> 32 QSFP+ 40GbE ports (min=0 \ max=32 QSFP+ Transceivers) 	See Configuration
Each Switch:	NOTE: 1
<ul style="list-style-type: none"> 2 Power Supplies Standard (min=2 \ max=2) 5 Front to Back Fan Trays Standard (min=5 \ max=5) 1U - Height 	
PDU Cable NA/MEX/TW/JP	JL313A#B2B
<ul style="list-style-type: none"> C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL313A#B2C
<ul style="list-style-type: none"> C13 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL313A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HPE Altoline 6941 32QSFP+ x86 ONIE AC Back-to-Front Switch	JL314A
<ul style="list-style-type: none"> 48 1/10BaseT GbE ports (min=0 \ max=48) 6 QSFP+ 40GbE ports (min=0 \ max=6 QSFP+ Transceivers) 	See Configuration
Each Switch:	NOTE: 1
<ul style="list-style-type: none"> 2 Power Supplies Standard (min=2 \ max=2) 5 Back to Front Fan Trays Standard (min=5 \ max=5) 1U - Height 	
PDU Cable NA/MEX/TW/JP	JL314A#B2B
<ul style="list-style-type: none"> C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL314A#B2C
<ul style="list-style-type: none"> C13 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL314A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules:

Note 1 Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord) or #B2E. (See Localization Menu)

Configuration

Rack Level Integration CTO Models

CTO Switch Chassis

HPE Altoline 6941 32QSFP+ x86 ONIE AC Front-to-Back Switch	JL313A
<ul style="list-style-type: none"> 32 QSFP+ 40GbE ports (min=0 \ max=32 QSFP+ Transceivers) <p>Each Switch:</p> <ul style="list-style-type: none"> 2 Power Supplies Standard (min=2 \ max=2) 5 Front to Back Fan Trays Standard (min=5 \ max=5) 1U - Height 	See Configuration NOTE: 1
PDU Cable NA/MEX/TW/JP	JL313A#B2B
<ul style="list-style-type: none"> C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL313A#B2C
<ul style="list-style-type: none"> C13 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL313A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	
HPE Altoline 6941 32QSFP+ x86 ONIE AC Back-to-Front Switch	JL314A
<ul style="list-style-type: none"> 48 1/10BaseT GbE ports (min=0 \ max=48) 6 QSFP+ 40GbE ports (min=0 \ max=6 QSFP+ Transceivers) <p>Each Switch:</p> <ul style="list-style-type: none"> 2 Power Supplies Standard (min=2 \ max=2) 5 Back to Front Fan Trays Standard (min=5 \ max=5) 1U - Height 	See Configuration NOTE: 1
PDU Cable NA/MEX/TW/JP	JL314A#B2B
<ul style="list-style-type: none"> C13 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL314A#B2C
<ul style="list-style-type: none"> C13 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL314A#B2E
<ul style="list-style-type: none"> NEMA L6-20P Cord (NA/MEX/JP/TW) 	

Configuration Rules:

Note 1 Localization (Wall Power Cord) required on orders without #B2B, #B2C (PDU Power Cord) or #B2E. (See Localization Menu)

Transceivers

SFP Transceivers

Configuration

HPE X120 1G SFP RJ45 T Transceiver	JD089B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A

SFP+ Transceivers

HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE X130 10G SFP+ LC SR Data Center Transceiver	JL437A
HPE X130 10G SFP+ LC LR Data Center Transceiver	JL439A
HPE X130 10G SFP+ LC LH 80km Transceiver	JG915A
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C

QSFP+ Transceivers

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

Switch Enclosure Options

Rack Mount Kit

System (std 0 // max 1) User Selection (min 0 // max 1)

HPE Altoline Gen3 Rackmount Kit	JL228A
	See Configuration
	NOTE: 1, 3

Configuration Rules:

Note 1

This rack mount kit is only supported on the following switches:

HPE Altoline 6920 48XG 6QSFP+ x86 ONIE AC Front-to-Back Switch	JL167A
HPE Altoline 6920 48XG 6QSFP+ x86 ONIE AC Back-to-Front Switch	JL168A
HPE Altoline 6921 48XGT 6QSFP+ x86 ONIE AC Front-to-Back Switch	JL315A
HPE Altoline 6921 48XGT 6QSFP+ x86 ONIE AC Back-to-Front Switch	JL316A
HPE Altoline 6921 48SFP+ 6QSFP+ x86 ONIE AC Front-to-Back Switch	JL317A
HPE Altoline 6921 48SFP+ 6QSFP+ x86 ONIE AC Back-to-Front Switch	JL318A


Configuration

HPE Altoline 6940 32QSFP+ x86 ONIE AC Front-to-Back Switch	JL165A
HPE Altoline 6940 32QSFP+ x86 ONIE AC Back-to-Front Switch	JL166A
HPE Altoline 6941 32QSFP+ x86 ONIE AC Front-to-Back Switch	JL313A
HPE Altoline 6941 32QSFP+ x86 ONIE AC Back-to-Front Switch	JL314A
HPE Altoline 6960 32QSFP28 x86 ONIE AC Front-to-Back Switch	JL279A
HPE Altoline 6960 32QSFP28 x86 ONIE AC Back-to-Front Switch	JL280A

Note 3 If a switch ordered and factory racked, then this rackmount must be #0D1

Technical Specifications


HPE Altoline 6941 32QSFP+ x86 ONIE AC Front-to-Back Switch (JL313A)

I/O ports and slots	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	
Power supplies	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 (front-to-back airflow)	
Physical characteristics	Dimensions	17.26(w) x 20.28(d) x 1.71(h) in (43.84 x 51.51 x 4.34 cm)
	Weight	21.27 lb (9.65 kg)
	Memory and processor Intel Atom C2538 quad-core x86 processor @ 2.4 GHz, 8 GB DDR3 SDRAM; storage: mSATA SSD (Optional); Packet buffer size: 12 MB, 8 GB NAND flash	
Performance	40 Gbps Latency	> .6 μ s
	Throughput	up to 1440 Bpps
	Routing/Switching capacity	2560 Gbps
	Routing table size	64000 entries (IPv4), 20000 entries (IPv6)
	MAC address table size	320000 entries
	Environment	Operating temperature
Operating relative humidity		5% to 95%, noncondensing
Nonoperating/Storage temperature		-40°F to 158°F (-40°C to 70°C)
Airflow direction		Front-to-back
Electrical characteristics	Frequency	50/60 Hz
	Voltage	90 - 264 VAC, rated
	Maximum power rating	315 W
	Idle power	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
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	
Emissions	FCC part 15 Class A; EN 55022 Class A; VCCI	
Immunity	ESD	EN 60950
	EFT/Burst	IEC 68-2-14
Management	Command-line interface; Out-of-band management; SNMP manager; Telnet; FTP	
Services	Refer to the Hewlett Packard Enterprise website at http://www.hpe.com/networking/services for	

Technical Specifications

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 6941 32QSFP+ x86 ONIE AC Back-to-Front Switch (JL314A)

I/O ports and slots	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	
Power supplies	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 (back-to-front airflow)	
Physical characteristics	Dimensions	17.26(w) x 20.28(d) x 1.71(h) in (43.84 x 51.51 x 4.34 cm)
	Weight	21.27 lb (9.65 kg)
Memory and processor	Intel Atom C2538 quad-core x86 processor @ 2.4 GHz, 8 GB DDR3 SDRAM; storage: mSATA SSD (Optional); Packet buffer size: 12 MB, 8 GB NAND flash	
Performance	40 Gbps Latency	> .6 μ s
	Throughput	up to 1440 Bpps
	Routing/Switching capacity	2560 Gbps
	Routing table size	64000 entries (IPv4), 20000 entries (IPv6)
	MAC address table size	320000 entries
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
	Operating relative humidity	5% to 95%, noncondensing
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)
	Airflow direction	Back-to-front
Electrical characteristics	Frequency	50/60 Hz
	Voltage	90 - 264 VAC, rated
	Maximum power rating	315 W
	Idle power	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
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Emissions	FCC part 15 Class A; EN 55022 Class A; VCCI	
Immunity	ESD	EN 60950
	EFT/Burst	IEC 68-2-14

Technical Specifications

Management

Command-line interface; Out-of-band management; SNMP manager; Telnet; FTP

Services

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Summary of Changes

Date	Version History	Action	Description of Change:
18-Apr-2017	From Version 1 to 2	Added	Transceivers added on the Configuration section: JL437A, JL439A
05-Sep-2016	Version 1	Creation	Document creation



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