

Overview

HPE Altoline 6822 Switch Series



Models

HPE Altoline 6822 48XG 6QSFP28 x86 ONIE Switch

JL442A

Key features

- High-density 10GbE ports and low latency for demanding applications
- Open networking and disaggregated solution for customer choice
- ONIE boot loader for choice of network OS and easy installation
- VXLAN L2 and L3 for efficient network virtualization overlay solutions
- Intel Broadwell-DE, 4-core 2.4GHz CPU; Switching ASIC: Broadcom Qumran-MX
- Redundant fans, and power supplies for data center deployments

Product overview

The HPE Altoline 6822 Switch Series are top-of-rack (ToR) leaf switches for high-performance cloud data centers in a compact 1RU form factor. The switches provide L2 and L3 switching across up to 48 GbE SFP+ ports, with 6 x 100GbE QSFP28 uplinks.

The HPE Altoline 6822 Switch Series is designed to be deployed as leaf ToR switches supporting 1/10GbE server connections.

In the HPE Altoline 6822 Switch Series, bare-metal switches are loaded with the Open Network Install Environment (ONIE), which supports installing and uninstalling of compatible third-party switch Network Operating System (NOS) offerings.

Features and benefits

Data center optimized

- **Flexible high port density**
The HPE Altoline 6822 Switch Series enables scaling of the server edge with 1/10GbE copper or fiber server connections, with 100GbE uplinks, to new heights with high density in 1RU design.

Overview

- **High-performance switching**
Broadcom Qumran-MX ASIC delivers low latency for very demanding cloud data center applications; the switch delivers high-performance switching capacity and packet forwarding
- **Lossless architecture**
Deep buffer design ensures network continuity
- **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 5+1 redundant fan trays enhance reliability and availability
VAC and VDC power supplies are supported.
- **VXLAN hardware support**
Supports VXLAN L2 and L3 VTEP overlay technologies; can terminate and forward VXLAN tunnels; supports over 16 million VXLAN IDs
- **NEBS Level 3 Compliant**
- **Timing synchronization (requires support by Network Operating System)**
 - SyncE support stratum 3E
 - IEEE 1588 step 1 and step 2

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**
Switch is loaded with the ONIE boot loader for NOS installation and uninstallation
- **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

- Surge 6KV compliant 90+% efficient under nominal condition (AC) and compatible with HVDC (High voltage Direct Current) input
- Maximum power: 241 W without pluggable optics
- Rack mountable in standard 19" racks

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 6822 48XG 6QSFP28 x86 ONIE Switch

- 48 SFP/SFP+ 1/10GbE ports (min 0 // max 48 XCVRs)
- 6 QSFP+/QSFP28 40/100GbE ports (min=0 // max=6 XCVRs)

- Each Switch Includes:
- 2 Power Supply Slots
- 6 Fan Trays Slots
- 1U - Height

JL442A
See Configuration
NOTE: 2, 3, 4

Configuration Rules:

Note 2	The following SFP/SFP+ Transceivers install into this Switch	
	HPE X130 10G SFP+ LC SR Data Center Transceiver	JL437A
	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 X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
Note 3	The following 40G Transceivers install into this Switch: (Use #0D1 or #B01 if switch is CTO) - if applicable	
	HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
	HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
Note 4	The following QSFP28 Transceivers install into this switch:	
	HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
	HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A

Rack Level Integration CTO Models

CTO Switch Chassis

HPE Altoline 6822 48XG 6QSFP28 x86 ONIE Switch

- 48 SFP/SFP+ 1/10GbE ports (min 0 // max 48 XCVRs)
- 6 QSFP+/QSFP28 40/100GbE ports (min=0 // max=6 XCVRs)

- Each Switch Includes:
- 2 Power Supply Slots
- 6 Fan Trays Slots
- 1U - Height

JL442A
See Configuration
NOTE: 2, 3, 4, 6

Configuration Rules:

Configuration

Note 2	The following SFP/SFP+ Transceivers install into this Switch	
	HPE X130 10G SFP+ LC SR Data Center Transceiver	JL437A
	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 X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
Note 3	The following 40G Transceivers install into this Switch: (Use #0D1 or #B01 if switch is CTO) - if applicable	
	HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
	HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
Note 4	The following QSFP28 Transceivers install into this switch:	
	HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
	HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A
Note 6	If this Switch Chassis is selected for Rack Level Integration, Then the Switch Chassis needs to integrate (with #0D1) to the HPE Rack.	

Switch Options

Transceivers

SFP+ Transceivers

HPE X130 10G SFP+ LC SR Data Center Transceiver	JL437A
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 X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A

QSFP+ Transceivers

HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A

QSFP28 Transceivers

HPE X150 100G QSFP28 MPO SR4 100m MM Transceiver	JL274A
HPE X2A0 100G QSFP28 to QSFP28 7m Active Optical Cable	JL276A

Remarks:

OCA Blue **NOTE:**

Optical transceiver support will be dependent on the chosen OS. Please ensure you verify with HPE sales rep or chosen NOS vendor on transceiver support.

Switch Enclosure Options

Configuration

Option Kits

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

HPE Altoline Type 3 Fan Tray AC Power Supply and Rack Mount Front-to-Back Kit	JL440A
<ul style="list-style-type: none"> • Included in the Option Kit: (Default) • Qty 2 AC PSU • Qty 6 Front-to-Back Fan Trays • Qty 1 Rack Mount Kit (JL198A - HPE AL Gen2 Rackmount Kit) 	See Configuration NOTE: 1, 2
PDU Cable NA/MEX/TW/JP	JL440A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL440A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL440A#B2E
<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
No Power Cord	JL440A#AC3
<ul style="list-style-type: none"> • No Localized Power Cord Selected 	
HPE Altoline Type 3 Fan Tray AC Power Supply and Rack Mount Back-to-Front Kit	JL441A
<ul style="list-style-type: none"> • Included in the Option Kit: • Qty 2 AC PSU • Qty 6 Back-to-Front Fan Trays • Qty 1 Rack Mount Kit (JL198A - HPE AL Gen2 Rackmount Kit) 	See Configuration NOTE: 1, 2
PDU Cable NA/MEX/TW/JP	JL441A#B2B
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (NA/MEX/TW/JP) 	
PDU Cable ROW	JL441A#B2C
<ul style="list-style-type: none"> • C15 PDU Jumper Cord (ROW) 	
High Volt Switch to Wall Power Cord	JL441A#B2E
<ul style="list-style-type: none"> • HPE 2.3M C13 to NEMA L6-20P Power Cord(J9936A) 	
No Power Cord	JL441A#AC3
<ul style="list-style-type: none"> • No Localized Power Cord Selected 	
HPE Altoline Type 3 Fan Tray DC Power Supply and Rack Mount Front-to-Back Kit	JL443A
<ul style="list-style-type: none"> • Included in the Option Kit: • Qty 2 DC PSU • Qty 6 Front-to-Back Fan Trays • Qty 1 Rack Mount Kit (JL198A - HPE AL Gen2 Rackmount Kit) 	See Configuration NOTE: 1
HPE Altoline Type 3 Fan Tray DC Power Supply and Rack Mount Back-to-Front Kit	JL444A
<ul style="list-style-type: none"> • Included in the Option Kit: • Qty 2 DC PSU • Qty 6 Back-to-Front Fan Trays • Qty 1 Rack Mount Kit (JL198A - HPE AL Gen2 Rackmount Kit) 	See Configuration NOTE: 1

Configuration

Configuration Rules:

Note 1 If a switch is ordered and factory racked, then this rackmount must be #0D1

Note 2 Localization required on orders without #B2B, #B2C or #B2E options.

Remarks: Drop down under power supply should offer the following options and results:
Switch/Router/Power Supply to PDU Power Cord - #B2B in North America, Mexico, Taiwan, and Japan or #B2C ROW. (Watson Default B2B or B2C for Rack Level CTO)
Switch/Router/Power Supply to Wall Power Cord - Localized Option (Watson Default for BTO and Box Level CTO)
#AC3 - No Power Cord

Technical Specifications

HPE Altoline 6822 48XG 6QSFP28 x86 ONIE Switch (JL442A)

I/O ports and slots	48 SFP+ 1/10GbE ports (IEEE 802.3ae Type 10GBASE-ER, IEEE 802.3ae Type 10GBASE-LR, IEEE 802.3ae Type 10GBASE-SR, IEEE 802.3z Type 1000BASE-SX, IEEE 802.3z Type 1000BASE-LX) 6 QSFP28 100GbE ports (each supporting 1 x 40/100 GbE)			
Additional ports and slots	1 RJ-45 serial console port 1 x RJ-45 100/1000BASE-T management port 1 x USB Type A storage port 1 x RJ-45 100/1000BASE-T management port 1 x USB Type A storage port			
Power supplies	2 power supply slots; 1 minimum power supply required AC or -48 VDC supported deepening on the optional kit installed 1+1 redundancy and load sharing AC input range: 90 V~300 VAC (90~ 277 VAC is minimum) DC input range: -36~-72 VDC			
Fan tray	6 fan tray slots; minimum of 5 required Fans are hot-swappable and support 5+1 redundancy			
Physical characteristics	Bare chassis	Dimensions	17.26(w) x 20.28(d) x 1.73(h) (43.84 x 51.5 x 4.4 cm)	
		Weight	19.42 lb (8.81 kg)	
	Fully populated chassis	Dimensions	17.26(w) x 21.46(d) x 1.73(h) (43.84 x 54.5 x 4.4 cm)	
		Weight	24.47 lb (11.1kg)	
	Fan	Dimensions	1.93(w) x 4.33(d) x 1.65(h) (4.9 x 11 x 4.2 cm)	
		Weight	.32 lb (.143 kg)	
	Power supply AC	Dimensions	2.17 (w) x 13.39(d) x 1.57(h) (5.5 x 34 x 4 cm)	
		Weight	2.17 lb (.984 kg)	
	Power supply DC	Dimensions	2.17 (w) x 13.39(d) x 1.57(h) (5.5 x 34 x 4 cm)	
		Weight	2.18 lb (.987 kg)	
	Memory and processor	Intel® Broadwell-DE, 4-core 2.4GHz CPU; DDR4 SO-DIMM 2*8GB; NAND Flash: 32GB		
	Performance	Latency	< 10 μs (64-byte packets)	
Throughput		up to 720 Mpps		
Routing/Switching capacity		800 Gbps		
VLAN IDs		4000		
Packet Buffer Size		6 GB		
Routing table size		256K entries (IPv4), 64K entries (IPv6)		
MAC address table size		750K entries (MAC + IPv4 Host)		
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	Front-to-back or back-to-front depending on the optional kit that is installed		

Technical Specifications

Electrical characteristics	Frequency	50/60 Hz
	Voltage	AC input range: 90 V~300 VAC (90~ 277 VAC minimum) DC input range: -36~-72 VDC
	Maximum power rating	380 W
	Idle power	241 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	IEC/EN 60950-1; UL 609501-1; CSA 22.2 No 60950-1 IEC/EN 62368-1	
Emissions	FCC part 15 Subpart B Class A; EN 55032 Class A; VCCI-CISPR 32 Class A; FCC part 15 Subpart B Class A; ICES-003 Class A; BSMI CNS 13438 Class A; EN 61000-3-2 Class A; EN 61000-3-3	
Immunity	EN55024 IEC 61000-4-2/3/4/5/6/8/11	
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 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.	

Summary of Changes

Date	Version History	Action	Description of Change:
02-Jul-2018	Version 4	Changed	Minor updates made on the document
4-Jun-2018	Version 3	Changed	Document name changed from HPE Altoline 6800 Switch Series to HPE Altoline 6822 Switch Series. Updates made on Technical Specifications.
15-Jan-2018	Version 2	Change	Edits made on Features, Configuration and Technical Specifications.
08-Jan-2018	Version 1	Creation	Document creation



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