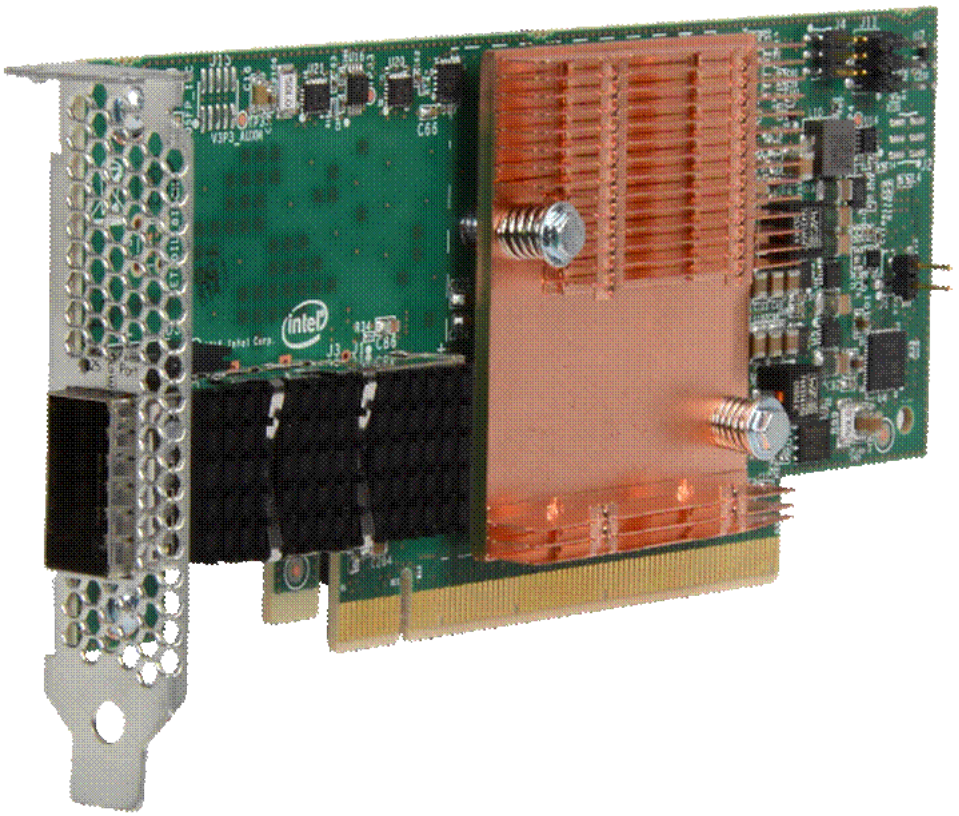
Overview

HPE Adapters with Intel OPA

HPE Adapters with Intel OPA is designed to provide a high-performance and scalable fabric for High Performance Computing (HPC) systems built with HPE ProLiant XL and DL servers. Intel Omni-Path Adapters, an element of the Intel Omni-Path Architecture, use an advanced "on-load" design that scales fabric performance with rising server core counts, making these adapters ideal for today's increasingly demanding workloads.
Combined with Intel Omni-Path Switches, Intel Omni-Path Adapters deliver low latency and up to 100Gbps bandwidth, ideal for performance driven server and storage clustering applications in HPC data centers.



Models

HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21

Kit Contents

- HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter
- Low profile bracket on the adapter; full height bracket in the box
- Read Me First

Servers supported for HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter

HPE ProLiant XL Servers

- HPE ProLiant XL170r Gen10 for Apollo 2000
- HPE ProLiant XL190r Gen10 for Apollo 2000

- HPE ProLiant XL270d Gen10 for Apollo 6500
- HPE ProLiant Apollo 4510 Gen10
- HPE ProLiant XL220n Gen10 Plus for Apollo 2000
- HPE ProLiant XL290n Gen10 Plus for Apollo 2000
- HPE ProLiant XL225n Gen10 Plus for Apollo 2000 (EPYC 7xx3 processors only)

HPE Servers

- HPE ProLiant DL320 Gen 11
- HPE ProLiant DL380 Gen 11
- HPE ProLiant DL380a Gen 11
- HPE ProLiant DL385 Gen 11
- HPE ProLiant DL560 Gen 11
- HPE ProLiant DL360 Gen10
- HPE ProLiant DL380 Gen10
- HPE ProLiant DL560 Gen10
- HPE ProLiant DL580 Gen10
- HPE ProLiant DL380 Gen10 Plus
- HPE ProLiant DL360 Gen10 Plus
- HPE ProLiant DL325 Gen10 Plus v2
- HPE ProLiant DL385 Gen10 Plus v2
- Cray XD295 Gen11
- Cray XD220 Gen11
- Cray XD225 Gen11

Notes: For the HPE ProLiant XL230k Gen10 for Apollo 6000, please select the dedicated adapter mezzanine form factor (851226-B21)

Standard Features

Product Features

- 100 Gbps - PCIe x16 Adapter
- Optimized for scalable MPI message rate and latency
- Supports MSI-X interrupt handling optimized for multi-core compute nodes
- Operates without external memory
- Improved thermal control with HPE iLO technology
- Boot over Omni-Path
- Linux server operating system support
- Low profile PCIe Gen3 x16
- HPE Standard warranty, support, services

Congestion Management

Medium grained adaptive routing and dispersive routing, Explicit congestion backward notification.

Protocol Control Libraries

HPC application focused protocol control libraries that include Performance Scale Messaging (PSM) and OFED Verbs.

MTU sizes

Maximum Transfer Unit (MTU) sizes can be set to 2048 bytes, 4096 bytes, 8192 bytes, or 10240 bytes.

MSI-X

Message Signaled Interrupt provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

Management Support
The HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter is supported by Hewlett Packard Enterprise Integrated Lights-Out (iLO).

Server Integration
The HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter is validated, tested, and qualified server options for the supported HPE ProLiant XL and DL servers.
This approach provides a more robust and reliable networking solution than offerings from other venders and provides users with a single point of contact for both their servers and their network adapters.

Configuration Utilities
The HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter is configurable through UEFI.

LED Indicators
The colored LED on HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter indicates link status and link activity.

HPE Sea of Sensors 3D
Support for the HPE Sea of Sensors technology for improved thermal control and energy efficiency.

Warranty
1 year warranty, parts exchange.

For more information
To learn more on services for HPE Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:
http://www.hpe.com/services/

Configuration Information

Direct Attach Cable (Passive Copper cables)

HPE 0.5m 100Gb QSFP28 Omni-Path Architecture Copper Cable	830024-B21
HPE 1m 100Gb QSFP28 Omni-Path Architecture Copper Cable	830024-B22
HPE 1.5m 100Gb QSFP28 Omni-Path Architecture Copper Cable	830024-B23
HPE 2m 100Gb QSFP28 Omni-Path Architecture Copper Cable	830024-B24
HPE 3m 100Gb QSFP28 Omni-Path Architecture Copper Cable	830024-B25

Notes: Direct Attach Cable must be purchased separately for copper environments

Active Optic Cables (AOCs)

HPE 3M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B21
HPE 5M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B22
HPE 7M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B23
HPE 10M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B24
HPE 15M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B26
HPE 20M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B27
HPE 30M 100Gb QSFP28 Omni-Path Optical Power Class 2 Cable	881204-B28

Notes: Active Optical Cable must be purchased separately for fiber-optic environments.

Technical Specifications

General Specifications	
Network Processor	Intel OPA HFI ASIC
Data Rate	100Gbps - PCIe x16
Bus Type	PCIe Gen3 x16

Form Factor	Low profile adapter compliant with the PCIe Gen3 standard	
Power and Environmental Specifications		
Operating	Temperature	32° to 131° F (0° to 55° C)
	Humidity	10% to 85% non-condensing
Power	PCIe x16 adapter: 7.4W (typical), 11.7W (max) with passive copper cable. 10.6W (typical), 14.9W (max) with Active Optical Cable (3 Watts Max)	
EMC (Emissions)	**US/Canada** • FCC Part 15, Subpart B, Class A • CAN ICES-3 (A)/NMB-3(A) **Europe/International** • CISPR22 • CISPR32/EN55032 • EN55024 • EN61000-3-2 • EN61000-3-3 **Japan** • VCCI, Class A **Australia/New Zealand** • AS/NZS CISPR 22, Class A **Korea** • RRA/KC (KN32, KN35), Class A **Taiwan** • BSMI (CNS 13438), Class A **Customs Union: Russian Federation, Belarus and Kazakhstan** • TR CU 020/2011 "Electromagnetic compatibility of technical equipment"	
RoHS/REACH	• Complies with RoHS II Directive 2011/65/EU of the European Parliament • Complies with REACH Regulation (EC) No 1907/2006	
Safety	**US/Canada** • TUV NRTL: UL 60950-1, CSA 22.1.No. 60950-1 **Europe** • TUV: EN60950-1 **International** • CB Scheme: IEC 60950-1 **Customs Union: Russian Federation, Belarus and Kazakhstan** • TR CU 004/2011 "On Safety of Low-Voltage Equipment"	
Operating System Support	The HPE 100Gb 1p OP101 QSFP28 x16 OPA Adapter is supported on the following 64-bit Linux operating systems: • RHEL: 7.4 • SLES: 12 SP3 • CentOS: 7.4 Please refer to the firmware/software download page of the device for the latest update.	

Environment-friendly Products and Approach - End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs**, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site**. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
20-Jun-2023	Version 9	Changed	Overview section was updated.
03-Apr-2023	Version 8	Changed	QS name was changed to the series name. Overview section was updated.
04-Oct-2021	Version 7	Changed	Add XL225n, DL385, DL325 compatibility Overview section was updated.
06-Jul-2021	Version 6	Changed	Overview and Related Options sections were updated. Gen10 Plus servers added, first generation of optical cables removed
03-Dec-2018	Version 5	Changed	Overview was section was updated,
07-May-2018	Version 4	Changed	829334-B21 removed, Supported OS updated, Supported platforms updated
04-Dec-2017	Version 3	Updated	Add SKUs to the related Options section
26-Sep-2016	Version 2	Changed	Add HPE 100Gb 1p OP101 QSFP28 x8 OPA Adapter
06-Jun-2016	Version 1	New	New QuickSpecs

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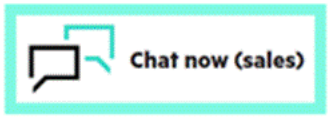

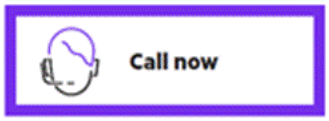

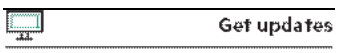

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