Shape the Future of QuickSpecs - Your Input Matters

Compute 100Gb Ethernet Adapters for HPE QuickSpecs

Secure, scalable networks powering AI, cloud, and streaming demands.

Driven by hybrid cloud services, mobile data and streaming video applications, and new AI workloads, IT professionals are constantly challenged to deliver secure and reliable network bandwidth that cost-effectively scales to demands of the networking traffic. For any given workload, the right mix of performance, efficiency, reliability and security are paramount.

HPE has your data center infrastructure covered with the latest networking adapters, switches, transceivers and cables for a complete end-to-end solution to support your various workload needs.

Compute 100Gb Ethernet Adapters for HPE

Starting with Gen10 Plus ProLiant Servers, HPE offers the industry's most secure server platform. Through its Root of Trust server design down to the Network Interface Card (NIC), these security features are built-in so you can deploy with confidence. HPE Gen10 Plus servers will help prevent, detect and recover from cyberattacks such as denial of service and malware-infected firmware. Protecting applications, data, and infrastructure from security breaches through storage and networking security technologies is a first priority for HPE Gen10 Plus Servers.

With Gen11 and Gen12 ProLiant Servers, HPE continues to offer industry-leading security and builds on Gen10 Plus features by adding support for SPDM security on select Ethernet Adapters.

Models

Generation Support		Gen10+	Gen11	Gen12
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21	X	X	X
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21	X	X	X
Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE[1]	P41611-B21	X[1]	X[1]	
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21	X	X	X
Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE	P73111-B21		X	X
Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE	P73114-B21		X	X

Notes: Please go to Service and Support Section to visit the hyperlinks.

– [1] Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE - P41611-B21 is qualified on DL110 server platform only.

Kit Contents

PCIe Ethernet Adapter Option Kits include:

- HPE Ethernet Adapter (with Full-Height bracket installed)
- Quick install card
- Product warranty statement
- Low Profile Bracket

OCP Ethernet Adapter Option Kits include:

- HPE Ethernet Adapter
- Quick install card
- Product warranty statement

Server support

Network Adapters below are supported on select HPE ProLiant DL110/320/325/340/345/360/365/380/385/560/580 & Alletra 2000/4100/4200/6500 Servers

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE (Only DL110)
- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
- Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE
- Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE

Please consult Server Platform QuickSpecs for details on supported SKUs and configurations.

Table 1

SKU	P21112-B21[3]	P22767-B21[3]	P41611-B21
Description	Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0	Stand up
ASIC/Chip	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM1
PCIe Version	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16 [2]
Power Requirement	Typical: 16.9 W Maximum: 19.2 W	Typical:15.9 W Maximum: 18.9 W	Typical: 21.8 W Maximum: 29.6 W
UEFI PXE Boot	Yes	Yes	Yes
Legacy BIOS PXE Boot	Yes	Yes	Yes

Wake-on-LAN (WOL)		Yes	
Internet Protocol (IP) IPv4, IPv6	Yes	Yes	Yes
Auto Negotiation[4]	Yes	Yes	Yes
iSCSI Remote Boot	iSCSI boot supported (UEFI), iSCSI acceleration only supported with TCP acceleration	iSCSI boot supported (UEFI), iSCSI acceleration only supported with TCP acceleration	iSCSI boot supported (UEFI), iSCSI acceleration only supported with TCP acceleration
Tunnel Offload	VXLAN, GENEVE, and NVGRE	VXLAN, GENEVE, and NVGRE	VXLAN, GENEVE, and NVGRE
RDMA[1]	(iWARP & RoCEv2)	iWARP & RoCEv2	iWARP & RoCEv2
Receive Side Scaling (RSS)	Yes	Yes	Yes
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	Yes	Yes	Yes
NPAR			
Single Root I/O Virtualization (SR-IOV)	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total
Data Plane Development Kit (DPDK)	Yes	Yes	Yes
Root of Trust	Hardware	Hardware	Hardware
SPDM support	No	No	No
Authenticated Updates	Yes	Yes	Yes
Secure Boot	Yes	Yes	Yes
Audit Log			
Sanitization	Yes	Yes	Yes

Notes:

- [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issues
- [2]Bifurcated into two x8 PCIe links; iLO 5 2.55 and ROM 1.40 are needed for bifurcation
- [3]Maximum total throughput of 100Gb per adapter (across all ports)
- [4] Intel Ethernet Adapters support mixing different port speeds on different ports of the same card.

Table 2			
SKU	P25960-B21 [3]	P73111-B21	P73114-B21
Description	Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE [3]	Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE	Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE
Card Type/Profile	Stand up	Stand up	OCP 3.0
ASIC/Chip	Mellanox MCX623106AS-CDAT	Broadcom BCM 57608	Broadcom BCM 57608
PCIe Version	PCIe 4x16	PCIe 5.0 x16	PCIe 5.0 x16
Power Requirement	Typical: 13W Max: 18.4W	Max: 11W	Max: 11W
UEFI PXE Boot	Yes	Yes	Yes
Legacy BIOS PXE Boot	Yes	No (UEFI only)	No (UEFI only)
Wake-on-LAN (WOL)			No
Internet Protocol (IP) IPv4, IPv6	Yes	Yes	Yes
Auto Negotiation[2]	1/10/25/40/50/100 Gb [3]	25/50/100 Gb	25/50/100 Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv2	RoCEv2
Receive Side Scaling (RSS)	Yes	Yes	Yes
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	Yes	Yes	Yes
NPAR		8 PFs per port (16 PFs per Board)	8 PFs per port (16 PFs per Board)
Single Root I/O Virtualization (SR-IOV)	512 total, variable per port	128 VFs	128 VFs
Data Plane Development Kit (DPDK)	Yes	Yes	Yes
Root of Trust	Hardware	Hardware	Hardware
SPDM Support	No	Yes	Yes
Authenticated Updates	Yes	Yes	Yes
Secure Boot	Yes	Yes	Yes
Audit Log	Yes	Yes	Yes
Sanitization		Yes	Yes

Notes:

- [1] HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issues.
- [2] Mellanox and Broadcom 100G Ethernet Adapters support mixing different port speeds on different ports of the same card.
- [3] For all Mellanox/Nvidia based adapters, please check Nvidia's "Validated and Supported Cables and Switches" lists for DAC, AOC, SFP, QSFP devices and network switches officially supported by Nvidia for use with Mellanox/Nvidia based Ethernet Adapters for HPE.

Notes: Although HPE has tested & qualified all interconnects indicated in the HPE Compute Transceiver and Cable Compatibility Matrix document, Nvidia support is only guaranteed when using interconnects and switches in the NVIDIA "Validated and Supported Cables and Switches" list.

Standard Features

Audit Logs

Audit Logs are a forensics capability that provides traceability into authenticated firmware updates by capturing changes in standard system logs.

Authenticated Updates

Authenticated Updates brings cryptographic keys onto the NIC (for HW Authentication) to protect user and configuration data from unauthorized access and verify digitally signed firmware.

Auto-negotiation

Automatically senses the speed of the device to which it is attached. It also automatically configures for half or full duplex, depending on the duplex mode of the switch, hub, or router connected to the adapter.

DPDK

DPDK with benefit for packet processing acceleration and use in NFV deployments.

IPv6

IPv6 uses 128-bit addressing allowing for more devices and users on the internet. IPv4 supported 32-bit addressing.

iWARP RDMA

Delivers RDMA on top of the pervasive TCP/IP protocol. iWARP RDMA runs over standard network and transport layers and works with all Ethernet network infrastructure. TCP provides flow control and congestion management and does not require a lossless Ethernet network. iWARP is a highly routable and scalable RDMA implementation.

Network Partitioning (NPAR)

Network Partitioning (NPAR) allowing administrators to configure a 10 Gb port as four separate partitions or physical functions. Each PCI function is associated with a different virtual NIC. To the OS and the network, each physical function appears as a separate NIC port.

Optimized for Virtualization

I/O Virtualization support for VMware NetQueue and Microsoft VMQ helps meet the performance demands of consolidated virtual workloads.

Preboot eXecution Environment (PXE)

Support for PXE enables automatic deployment of computing resources remotely from anywhere. It allows a new or existing server to boot over the network and download software, including the operating system, from a management/ deployment server at another location on the network.
Additionally, PXE enables decentralized software distribution and remote troubleshooting and repairs.

Root of Trust

Root of Trust enables a chain of trust for Authenticating updates to firmware via signature validation. This blocks installation of rogue or corrupted firmware and ensures that the executing firmware is trusted.

RDMA

Remote Direct memory Access (RDMA) is an accelerated I/O delivery mechanism that allows data to be transferred directly from the user memory of the source server to the user memory of the destination server bypassing the operating system (OS) kernel. Because the RDMA data transfer is performed by the DMA engine on the adapter's network processor, the CPU is not used for the data movement, freeing it to perform other tasks such as hosting more virtual workloads (increased VM density). RDMA protocols include RoCEv1, RoCEv2 and iWARP. All of these protocols reduce overall latency to deliver accelerated performance for applications such as Microsoft Hyper-V Live Migration, Microsoft SQL and Microsoft SharePoint with SMB Direct.

Receive Side Scaling (RSS)

RSS resolves the single-processor bottleneck by allowing the receive side network load from a network adapter to be shared across multiple processors. RSS enables packet receive-processing to scale with the number of available processors.

Sanitization

Sanitization (Secure User Data Erase) renders User and configuration data on the NIC irretrievable so that NICs can be safely repurposed or disposed.

Secure Boot

Secure Boot safeguards the system and ensures no rogue drivers are being executed on start-up.

Single-Root I/O Virtualization

Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device is capable of SR-IOV, and requires Server BIOS support, controller firmware, and OS support.

TCP/UDP/IP

TCP/IP offloading techniques including: TCP/IP, UDP checksum offload (TCO) moves the TCP and IP checksum offloading from the CPU to the network adapter. Large send offload (LSO) or TCP segmentation offload (TSO) allows the TCP segmentation to be handled by the adapter rather than the CPU

Tunnel Offload

Minimize the impact of overlay networking on host performance with tunnel offload support for VXLAN, NVGRE and GENEVE. By offloading packet processing to adapters, customers can use overlay networking to increase VM migration flexibility and virtualized overlay networks with minimal impact to performance. HPE Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption. Tunnel Offload supports VMware's VXLAN, Microsoft's NVGRE solutions and Generic Network Virtualization Encapsulation (GENEVE) solutions.

VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)

VMware NetQueue is technology that significantly improves performance of 10 Gigabit Ethernet network adapters in virtualized environments. Windows Hyper-V VMQ (VMQ) is a feature available on servers running Windows Server 2008 R2 with VMQ-enabled Ethernet adapters. VMQ uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine.

Wake-on-LAN

Wake-on-LAN (WoL) support through the PCI Express bus. A system that supports Wake-on-LAN can remain available to the systems administrator during its normal downtime. Once the machine is awakened, the systems administrator can remotely control, audit, debug, or manage the machine.

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where, and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.
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Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.hpe.com/services/operational

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential, which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical, which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/services/techcare

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the HPE Service Credits Menu

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at https://ssc.hpe.com/portal/site/ssc/

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
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Consume IT On Your Terms

GreenLake is the cloud delivering a unified platform experience that allows enterprises to simplify IT, reduce costs, and transform faster.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE" https://www.hpe.com/us/en/contact-hpe.html

For more information, refer to: http://www.hpe.com/services

Operating System and Virtualization Support

The Operating Systems supported by this adapter are based on the server OS support. Please refer to the OS Support Matrix at https://www.hpe.com/us/en/servers/server-operating-systems.html.

Drivers and Software Download (Please use hyperlinks below):

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
- Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE
- Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE

To access Vendor Technical Specifications, please visit the following hyperlinks:

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
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- Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE

Transceiver and Cable Options

Please refer to Compute Transceiver and Cable Compatibility Matrix: https://psnow.ext.hpe.com/doc/a00002507enw

Environmentally 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 (2012/19/EU) 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
15-Dec-2025	Version 9	Changed	Standard Features section was updated.
03-Mar-2025	Version 8	Changed	Updated to remove Obsolete SKUs, and include new Broadcom 100G NICs
04-Dec-2023	Version 7	Changed	Service and Support Section was updated
15-Nov-2021	Version 6	Changed	Service and Support Section was updated
17-Aug-2020	Version 5	Changed	SKUs Descriptions were updated
03-Feb-2020	Version 4	Changed	Platform Information Section was updated
02-Dec-2019	Version 3	Changed	Standard Features Section was updated
10-Jun-2019	Version 2	Changed	Removed Extended and modified bandwidth
04-Jun-2018	Version 1	New	New QuickSpecs

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