Overview

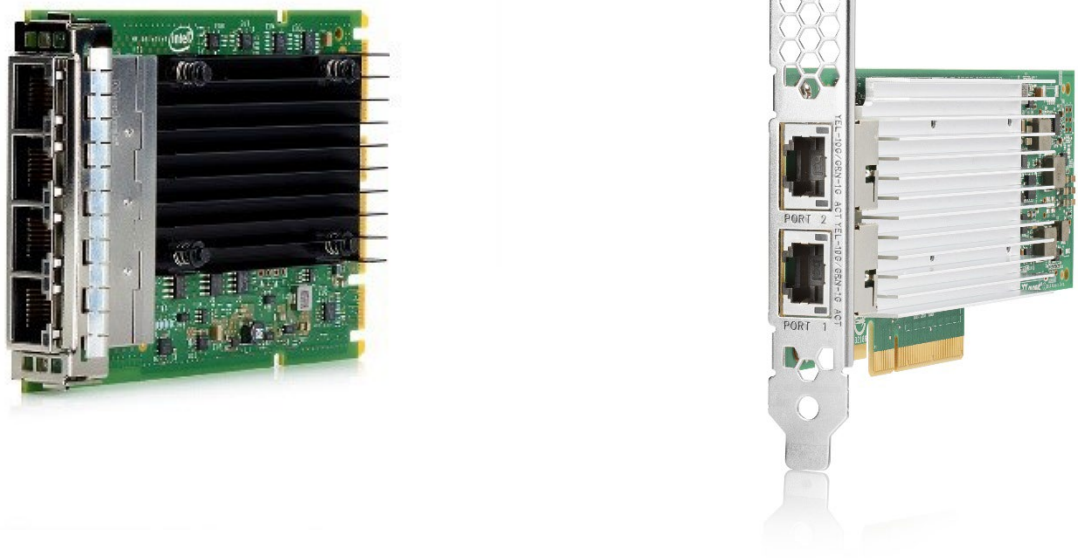
HPE Ethernet Adapters

HPE ProLiant DL, ML and Apollo

Driven by hybrid cloud services, mobile data and streaming video applications, 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.

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 first priority for HPE Gen10 Plus Servers. With Gen11 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



HPE Gen10 Plus and Gen11Ethernet Adapters

Overview

Gen10 Plus Models

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P51178-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE	P26253-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P26259-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P26262-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P26264-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P28787-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P28778-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P08458-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P41614-B21
Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE	P41636-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21
Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P41611-B21
Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P13188-B21
Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10112-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P42044-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	P10180-B21
Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P21109-B21

Notes: Please go to Technical Specifications Section to visit the hyperlinks.

Standard Features

Gen10 Plus - Table 1		
SKU	P51178-B21	P51181-B21
Description	Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0
ASIC/Chip	Broadcom BCM5719	Broadcom BCM5719
PCIe Version	PCIe 2.0 x4	PCIe 2.0 x4
Power Requirement	5.78W	4.69W
UEFI PXE Boot	√	√
Legacy BIOS PXE Boot	√	√
Wake-on-LAN (WOL)	No	√
Internet Protocol (IP) IPv4, IPv6	√	√
Auto Negotiation	1GbE/100Mb/1Mb	1GbE/100Mb/1Mb
iSCSI Remote Boot	UEFI	UEFI
Tunnel Offload	No	No
RDMA[1]	No	No
Receive Side Scaling (RSS)	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	No	No
NPAR	No	No
Single Root I/O Virtualization (SR-IOV)	No	No
Data Plane Development Kit (DPDK)	No	No
Root of Trust	Limited root of trust	Limited root of trust
Authenticated Updates	Software	Software
Secure Boot	No	No
Audit Log	No	No
Sanitization	No	No
Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue.		

Standard Features

Gen10 Plus - Table 2				
SKU	P26256-B21	P26259-B21	P10097-B21	P26253-B21
Description	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE
Card Type/Profile	OCP 3.0	Stand up	OCP 3.0	Stand up
ASIC/Chip	Broadcom BCM57412	Broadcom BCM57412	Broadcom BCM57416	Broadcom BCM57416
PCIe Version	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Power Requirement	Typical: 11.6 W	Typical: 7.9 W Max: 9.1 W	Typical: 14.6 W Max: 16.1 W	Typical: 16.4 W Max: 16.1 W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)	√			
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation	1Gb, 10Gb	1Gb, 10Gb	1Gb, 10Gb	1Gb, 10Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs
Single Root I/O Virtualization (SR-IOV)	128VF(total per chip)	128VF(total per chip)	128VF(total per chip)	128VF(total per chip)
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log	√	√	√	√
Sanitization	√	√	√	√
Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue				

Standard Features

Gen10 Plus - Table 3				
SKU	P10115-B21	P26262-B21	P26269-B21	P26264-B21
Description	Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
Card Type/Profile	OCP 3.0	Stand up	OCP 3.0	Stand up
ASIC/Chip	Broadcom BCM57414	Broadcom BCM57414	Broadcom BCM57504	Broadcom BCM57504
PCIe Version	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 4.0 x16	PCIe 4.0 x16
Power Requirement	Typical: 11.6 W	Typical: 9.1 W Max: 9.9 W	Typical 16.0W Max 16.9W	Typical 15.2W Max 16.7W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)	√		√	
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation	1Gb, 10Gb, 25Gb	1Gb, 10Gb, 25Gb,	10Gb, 25Gb	10Gb, 25Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv2	RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs
Single Root I/O Virtualization (SR-IOV)	128VF(total per chip)	128VF(total per chip)	1K VF (total per chip)	1K VF (total per chip)
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log	√	√	√	√
Sanitization	√	√	√	√

Notes:

- [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue.
- 50G can be supported as either 2x25G NRZ or 1x50G PAM4 when using QSFP56. 100G can be supported as either 4x25G NRZ or 2x50G PAM4 when using QSFP56.
- For BCM57414, mixing link speeds of (10Gb/25Gb) between ports on a 2-port 25Gb device is not supported. (1G/10G and 1G/25G port speed mixing is supported).
- The 4-port BCM57504 does support mismatched/different (10Gb/25Gb) link speeds on different ports.

Standard Features

Gen10 Plus - Table 4				
SKU	P08449-B21[2]	P21106-B21[2]	P28787-B21	P28778-B21
Description	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE	Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
Card Type/Profile	OCP 3.0	Stand up	Stand up	OCP 3.0
ASIC/Chip	Intel® Ethernet Controller I350-AM4	Intel® Ethernet Controller I350-AM4	Intel® Ethernet Controller X710-BM2	Intel® Ethernet Controller X710-BM2
PCIe Version	PCIe 2.1 x4	PCIe 2.1 x4	PCIe 3.0 x8	PCIe 3.0 x8
Power Requirement	Typical: 4.6W Max: 5.2W	Typical: 5W Max: 6W	Typical: 3.3 W Max: 3.7 W	Typical: 2.9 W Max: 4.6 W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)	√			√
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation	√	√	√	√
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE	VXLAN,NVGRE	VXLAN, GENEVE, NVGRE	VXLAN, GENEVE, NVGRE
RDMA[1]				
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	32VF's total	32VF's total	128 VF's total	128 VF's total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust				
Authenticated Updates	√	√	√	√
Secure Boot	√	√		
Audit Log				
Sanitization	√	√	√	√

Notes:

- [1]HPE recommends using Identical network adapters on both ends of the RoCE connection to avoid interoperability issue
- [2]I350-T4 Adapter does not support thermal reading, which may result in higher fan noise when this card is installed. Please see customer advisory for additional details: **Document - Notice: (Revision) HPE ProLiant Gen10 Plus Servers - Fans Run At High Speed When the HPE 1GbE 4p BASE-T I350-T4 Adapter Is Installed In a PCI Slot | HPE Support**

Standard Features

Gen10 Plus - Table 5				
SKU	P08443-B21	P10106-B21	P08458-B21	P41614-B21
Description	Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0	Stand up	OCP 3.0
ASIC/Chip	Intel® E810-XXVAM2	Intel® E810-XXVAM2	Intel® Ethernet Controller E810-CAM1	Intel® Ethernet Controller E810-CAM1
PCIe Version	PCIe 4.0 x8	PCIe 4.0 x8	PCIe 4.0 x16	PCIe 4.0 x16
Power Requirement	Typical: 8.9 W Maximum: 9.7 W	Typical: 8.9 W Maximum: 10.1 W	Typical: 14.2 W Maximum: 16.7W	Typical: 14.6W Maximum: 18.2W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)		√		√
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation[2]	√	√	√	√
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	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	VXLAN, GENEVE, and NVGRE
RDMA[1]	(iWARP & RoCEv2)	(iWARP & RoCEv2)	(iWARP & RoCEv2)	iWARP & RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log				
Sanitization	√	√	√	√

Notes:
[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue.
[2] Intel Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen10 Plus - Table 6				
SKU	P21112-B21[3]	P22767-B21[3]	P41611-B21	P41636-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	Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0	Stand up	Stand up
ASIC/Chip	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM1	Intel® Ethernet Controller E810-CAM1
PCIe Version	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16 [2]	PCIe 4.0 x16
Power Requirement	Typical: 16.9W Maximum: 19.2W	Typical:15.9W Maximum: 18.9W	Typical: 21.8W Maximum: 29.6W	Typical: 19.3 W Maximum: 24.9 W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)		√		
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation[4]	√	√	√	√
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	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	VXLAN, GENEVE, and NVGRE
RDMA[1]	(iWARP & RoCEv2)	iWARP & RoCEv2	iWARP & RoCEv2	iWARP & RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log				
Sanitization	√	√	√	√

Notes:

- [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue
- [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.

Standard Features

Gen10 Plus - Table 7				
SKU	P10180-B21	P25960-B21	P13188-B21	P10112-B21
Description	Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
Card Type/Profile	Stand up	Stand up	Stand up	OCP 3.0
ASIC/Chip	Mellanox MCX623105AS-VDAT	Mellanox MCX623106AS-CDAT	Mellanox MCX512F-ACHT	Mellanox MCX562A-ACAI
PCIe Version	PCIe 4x16	PCIe 4x16	PCIe 3.0 x16	PCIe 3.0 x16
Power Requirement	Typical: 13W Max: 18.4W	Typical: 13W Max: 18.4W	Typical: 8W Max: 10W	Typical: 6.3W Max: 8.9W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)				√
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation[2]	1/10/25/40/50/100/200 Gb	1/10/25/40/50/100 Gb	10Gb, 25Gb	10Gb, 25Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	512 total, variable per port	512 total, variable per port	512 VF's total	512 VF's total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Firmware	Firmware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log	√	√	√	√
Sanitization			√	√

Notes:

[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue

[2] Mellanox Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen10 Plus - Table 8		
SKU	P42044-B21	P42041-B21
Description	Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0
ASIC/Chip	Mellanox MCX631102AS-ADAT	Mellanox MCX631432AS-ADAI
PCIe Version	PCIe 4x8	PCIe 4x8
Power Requirement	Typical: 13W Max: 18.4W	Typical: 13W Max: 18.4W
UEFI PXE Boot	√	√
Legacy BIOS PXE Boot	√	√
Wake-on-LAN (WOL)		√
Internet Protocol (IP) **IPv4, IPv6**	√	√
Auto Negotiation[2]	1/10/25Gb	1/10/25Gb
iSCSI Remote Boot	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√
NPAR		
Single Root I/O Virtualization (SR-IOV)	512 total, variable per port	512 total, variable per port
Data Plane Development Kit (DPDK)	√	√
Root of Trust	Hardware	Hardware
Authenticated Updates	√	√
Secure Boot	√	√
Audit Log	√	√
Sanitization		

Notes:

[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue

[2] Mellanox Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen10 Plus - Table 9	
SKU	P21109-B21
Description	Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
Card Type/Profile	Stand up
ASIC/Chip	Solarflare X2522-25G-PLUS
PCIe Version	PCIe 3.0 x8
Power Requirement	Typical: 14W Max: 17.5W
UEFI PXE Boot	√
Legacy BIOS PXE Boot	√
Wake-on-LAN (WOL)	
Internet Protocol (IP) IPv4, IPv6	√
Auto Negotiation	10Gb, 25Gb
iSCSI Remote Boot	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√
NPAR	
Single Root I/O Virtualization (SR-IOV)	240 VF's total
Data Plane Development Kit (DPDK)	√
Root of Trust	Firmware
Authenticated Updates	√
Secure Boot	√
Audit Log	√
Sanitization	√
OS Support	Xilinx may have reduced OS support compared to HPE ProLiant servers. Please check Xilinx website for latest OS support: **https://www.xilinx.com/support/download/nic-software-and-drivers.html**
Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue	

Standard Features

Gen11 Models

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P51178-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE	P26253-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P26259-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P26262-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P26264-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P08458-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P41614-B21
Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE	P41636-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21
Intel E810-2CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P41611-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P42044-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	P10180-B21
Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P21109-B21

Notes: Please go to Technical Specifications Section to visit the hyperlinks.

Standard Features

Gen11 - Table 10		
SKU	P51178-B21	P51181-B21
Description	Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0
ASIC/Chip	Broadcom BCM5719	Broadcom BCM5719
PCIe Version	PCIe 2.0 x4	PCIe 2.0 x4
Power Requirement	5.78W	4.69W
UEFI PXE Boot	√	√
Legacy BIOS PXE Boot	√	√
Wake-on-LAN (WOL)	No	√
Internet Protocol (IP) IPv4, IPv6	√	√
Auto Negotiation	1GbE/100Mb/1Mb	1GbE/100Mb/1Mb
iSCSI Remote Boot	UEFI	UEFI
Tunnel Offload	No	No
RDMA[1]	No	No
Receive Side Scaling (RSS)	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	No	No
NPAR	No	No
Single Root I/O Virtualization (SR-IOV)	No	No
Data Plane Development Kit (DPDK)	No	No
Root of Trust	Limited root of trust	Limited root of trust
Authenticated Updates	Software	Software
Secure Boot	No	No
Audit Log	No	No
Sanitization	No	No
SPDM Support		

Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue.

Standard Features

Gen11 - Table 11				
SKU	P26256-B21	P26259-B21	P10097-B21	P26253-B21
Description	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE
Card Type/Profile	OCP 3.0	Stand up	OCP 3.0	Stand up
ASIC/Chip	Broadcom BCM57412	Broadcom BCM57412	Broadcom BCM57416	Broadcom BCM57416
PCIe Version	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
Power Requirement	Typical: 11.6 W	Typical: 7.9 W Max: 9.1 W	Typical: 14.6 W Max: 16.1 W	Typical: 16.4 W Max: 16.1 W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)	√			
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation	1Gb, 10Gb	1Gb, 10Gb	1Gb, 10Gb	1Gb, 10Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs
Single Root I/O Virtualization (SR-IOV)	128VF(total per chip)	128VF(total per chip)	128VF(total per chip)	128VF(total per chip)
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log	√	√	√	√
Sanitization	√	√	√	√
SPDM Support				

Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue

Standard Features

Gen11 - Table 12				
SKU	P10115-B21	P26262-B21	P26269-B21	P26264-B21
Description	Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
Card Type/Profile	OCP 3.0	Stand up	OCP 3.0	Stand up
ASIC/Chip	Broadcom BCM57414	Broadcom BCM57414	Broadcom BCM57504	Broadcom BCM57504
PCIe Version	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 4.0 x16	PCIe 4.0 x16
Power Requirement	Typical: 11.6 W	Typical: 9.1 W Max: 9.9 W	Typical 16.0W Max 16.9W	Typical 15.2W Max 16.7W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)	√		√	
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation	1Gb, 10Gb, 25Gb	1Gb, 10Gb, 25Gb,	10Gb, 25Gb	10Gb, 25Gb
iSCSI Remote Boot	UEFI	UEFI	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2	RoCEv2	RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs	8PFs or 16PFs
Single Root I/O Virtualization (SR-IOV)	128VF(total per chip)	128VF(total per chip)	1K VF (total per chip)	1K VF (total per chip)
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log	√	√	√	√
Sanitization	√	√	√	√
SPDM Support			√	√

Notes:

- [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue.
- 50G can be supported as either 2x25G NRZ or 1x50G PAM4 when using QSFP56. 100G can be supported as either 4x25G NRZ or 2x50G PAM4 when using QSFP56.
- For BCM57414, mixing link speeds of (10Gb/25Gb) between ports on a 2-port 25Gb device is not supported. (1G/10G and 1G/25G port speed mixing is supported).
- The 4-port BCM57504 does support mismatched/different (10Gb/25Gb) link speeds on different ports.

Standard Features

Gen11 - Table 13				
SKU	P08449-B21[2]	P21106-B21[2]		
Description	Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE		
Card Type/Profile	OCP 3.0	Stand up		
ASIC/Chip	Intel® Ethernet Controller I350-AM4	Intel® Ethernet Controller I350-AM4		
PCIe Version	PCIe 2.1 x4	PCIe 2.1 x4		
Power Requirement	Typical: 4.6W Max: 5.2W	Typical: 5W Max: 6W		
UEFI PXE Boot	√	√		
Legacy BIOS PXE Boot	√	√		
Wake-on-LAN (WOL)	√			
Internet Protocol (IP) IPv4, IPv6	√	√		
Auto Negotiation	√	√		
iSCSI Remote Boot	UEFI	UEFI		
Tunnel Offload	VXLAN, NVGRE	VXLAN,NVGRE		
RDMA[1]				
Receive Side Scaling (RSS)	√	√		
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√		
NPAR				
Single Root I/O Virtualization (SR-IOV)	32VF's total	32VF's total		
Data Plane Development Kit (DPDK)	√	√		
Root of Trust				
Authenticated Updates	√	√		
Secure Boot	√	√		
Audit Log				
Sanitization	√	√		
SPDM Support				

Notes:

- [1]HPE recommends using Identical network adapters on both ends of the RoCE connection to avoid interoperability issue
- [2]I350-T4 Adapter does not support thermal reading, which may result in higher fan noise when this card is installed. Please see customer advisory for additional details: **Document - Notice: (Revision) HPE ProLiant Gen10 Plus Servers - Fans Run At High Speed When the HPE 1GbE 4p BASE-T I350-T4 Adapter Is Installed In a PCI Slot | HPE Support**

Standard Features

Gen11 - Table 14				
SKU	P08443-B21	P10106-B21	P08458-B21	P41614-B21
Description	Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0	Stand up	OCP 3.0
ASIC/Chip	Intel® E810-XXVAM2	Intel® E810-XXVAM2	Intel® Ethernet Controller E810-CAM1	Intel® Ethernet Controller E810-CAM1
PCIe Version	PCIe 4.0 x8	PCIe 4.0 x8	PCIe 4.0 x16	PCIe 4.0 x16
Power Requirement	Typical: 8.9 W Maximum: 9.7 W	Typical: 8.9 W Maximum: 10.1 W	Typical: 14.2 W Maximum: 16.7W	Typical: 14.6W Maximum: 18.2W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)		√		√
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation[2]	√	√	√	√
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	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	VXLAN, GENEVE, and NVGRE
RDMA[1]	(iWARP & RoCEv2)	(iWARP & RoCEv2)	(iWARP & RoCEv2)	iWARP & RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log				
Sanitization	√	√	√	√
SPDM Support				

Notes:
[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue
[2] Intel Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen11 - Table 15				
SKU	P21112-B21[3]	P22767-B21[3]	P41611-B21	P41636-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	Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE
Card Type/Profile	Stand up	OCP 3.0	Stand up	Stand up
ASIC/Chip	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM2	Intel® Ethernet Controller E810-CAM1	Intel® Ethernet Controller E810-CAM1
PCIe Version	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 4.0 x16 [2]	PCIe 4.0 x16
Power Requirement	Typical: 16.9W Maximum: 19.2W	Typical:15.9W Maximum: 18.9W	Typical: 21.8W Maximum: 29.6W	Typical: 19.3 W Maximum: 24.9 W
UEFI PXE Boot	√	√	√	√
Legacy BIOS PXE Boot	√	√	√	√
Wake-on-LAN (WOL)		√		
Internet Protocol (IP) IPv4, IPv6	√	√	√	√
Auto Negotiation[4]	√	√	√	√
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	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	VXLAN, GENEVE, and NVGRE
RDMA[1]	(iWARP & RoCEv2)	iWARP & RoCEv2	iWARP & RoCEv2	iWARP & RoCEv2
Receive Side Scaling (RSS)	√	√	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√	√	√
NPAR				
Single Root I/O Virtualization (SR-IOV)	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total	256VFs/port, 2k Total
Data Plane Development Kit (DPDK)	√	√	√	√
Root of Trust	Hardware	Hardware	Hardware	Hardware
Authenticated Updates	√	√	√	√
Secure Boot	√	√	√	√
Audit Log				
Sanitization	√	√	√	√
SPDM Support				

Notes:

- [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue
- [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

Standard Features

Gen11 - Table 16		
SKU	P10180-B21	P25960-B21
Description	Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
Card Type/Profile	Stand up	Stand up
ASIC/Chip	Mellanox MCX623105AS-VDAT	Mellanox MCX623106AS-CDAT
PCIe Version	PCIe 4x16	PCIe 4x16
Power Requirement	Typical: 13W Max: 18.4W	Typical: 13W Max: 18.4W
UEFI PXE Boot	√	√
Legacy BIOS PXE Boot	√	√
Wake-on-LAN (WOL)		
Internet Protocol (IP) IPv4, IPv6	√	√
Auto Negotiation[2]	1/10/25/40/50/100/200 Gb[2]	1/10/25/40/50/100 Gb
iSCSI Remote Boot	UEFI	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√	√
NPAR		
Single Root I/O Virtualization (SR-IOV)	512 total, variable per port	512 total, variable per port
Data Plane Development Kit (DPDK)	√	√
Root of Trust	Hardware	Hardware
Authenticated Updates	√	√
Secure Boot	√	√
Audit Log	√	√
Sanitization		
SPDM Support		

Notes:
[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue
[2] Mellanox Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen11 - Table 17			
SKU		P42044-B21	P42041-B21
Description		Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
Card Type/Profile		Stand up	OCP 3.0
ASIC/Chip		Mellanox MCX631102AS-ADAT	Mellanox MCX631432AS-ADAI
PCIe Version		PCIe 4x8	PCIe 4x8
Power Requirement		Typical: 13W Max: 18.4W	Typical: 13W Max: 18.4W
UEFI PXE Boot		√	√
Legacy BIOS PXE Boot		√	√
Wake-on-LAN (WOL)			√
Internet Protocol (IP) IPv4, IPv6		√	√
Auto Negotiation[2]		1/10/25Gb	1/10/25Gb
iSCSI Remote Boot		UEFI	UEFI
Tunnel Offload		VXLAN, NVGRE, GENEVE	VXLAN, NVGRE, GENEVE
RDMA[1]		RoCEv1, RoCEv2	RoCEv1, RoCEv2
Receive Side Scaling (RSS)		√	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)		√	√
NPAR			
Single Root I/O Virtualization (SR-IOV)		512 total, variable per port	512 total, variable per port
Data Plane Development Kit (DPDK)		√	√
Root of Trust		Hardware	Hardware
Authenticated Updates		√	√
Secure Boot		√	√
Audit Log		√	√
Sanitization			
SPDM Support			

Notes:

[1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue

[2] Mellanox Ethernet Adapters support mixing different port speeds on different ports of the same card.

Standard Features

Gen11 - Table 18	
SKU	P21109-B21
Description	Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
Card Type/Profile	Stand up
ASIC/Chip	Solarflare X2522-25G-PLUS
PCIe Version	PCIe 3.0 x8
Power Requirement	Typical: 14W Max: 17.5W
UEFI PXE Boot	√
Legacy BIOS PXE Boot	√
Wake-on-LAN (WOL)	
Internet Protocol (IP) IPv4, IPv6	√
Auto Negotiation	10Gb, 25Gb
iSCSI Remote Boot	UEFI
Tunnel Offload	VXLAN, NVGRE, GENEVE
RDMA[1]	RoCEv1, RoCEv2
Receive Side Scaling (RSS)	√
VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)	√
NPAR	
Single Root I/O Virtualization (SR-IOV)	240 VF's total
Data Plane Development Kit (DPDK)	√
Root of Trust	Firmware
Authenticated Updates	√
Secure Boot	√
Audit Log	√
Sanitization	√
OS Support	Xilinx has reduced OS support compared to HPE ProLiant servers. Please check Xilinx website for latest OS support: **https://www.xilinx.com/support/download/nic-software-and-drivers.html**
Platform Support	Supported on Gen 11 DL360, DL380 only

Notes: [1]HPE recommends using identical network adapters on both ends of the RoCE connection to avoid interoperability issue

Standard Features

Feature Definitions:

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.

Standard Features

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.

Standard Features

Server support

Networking Adapters below are supported on select HPE Proliant DL110/325/345/360/365/380/385 & Apollo2000/4200/6500 Servers

- Broadcom BCM5719 Ethernet 1Gb 4-port Base-T Adapter for HPE
- Broadcom BCM5719 Ethernet 1Gb 4-port Base-T OCP3 Adapter for HPE
- Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE
- Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE
- Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE
- Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
- Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE
- Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE
- Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE
- Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
- Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE (Only DL360 Gen11, DL380 Gen11, DL110 Gen11 and DL110 Gen10 Plus)
- Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE (Only DL110)
- 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)
- Marvell QL41132HLRJ Ethernet 10Gb 2-port BASE-T Adapter for HPE
- Marvell QL41132HQRJ Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE
- Marvell QL41132HLCU Ethernet 10Gb 2-port SFP+ Adapter for HPE
- Marvell QL41132HQCU Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
- Marvell QL41134HLCU Ethernet 10Gb 4-port SFP+ Adapter for HPE
- Marvell QL41232HLCU Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Marvell QL41232HQCU Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter(Only DL325/385/Apollo 2000 Gen10 Plus)
- Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
- Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE
- Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE
- Xilinx X2522-25G Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

Service and Support

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.

HPE Managed Services | HPE

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

Service and Support

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 quick-specs, 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/**

Service and Support

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.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- 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
http://www.hpe.com/services

Technical Specifications

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)

- **Broadcom BCM5719 Ethernet 1Gb 4-port Base-T Adapter for HPE**
- **Broadcom BCM5719 Ethernet 1Gb 4-port Base-T OCP3 Adapter for HPE**
- **Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE**
- **Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE**
- **Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE**
- **Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE**
- **Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE**
- **Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE**
- **Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE**
- **Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE**
- **Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE**
- **Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE**
- **Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE**
- **Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE**
- **Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE**
- **Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE**
- **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**
- **Marvell QL41132HLRJ Ethernet 10Gb 2-port BASE-T Adapter for HPE**
- **Marvell QL41132HQRJ Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE**
- **Marvell QL41132HLCU Ethernet 10Gb 2-port SFP+ Adapter for HPE**
- **Marvell QL41132HQCU Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE**
- **Marvell QL41134HLCU Ethernet 10Gb 4-port SFP+ Adapter for HPE**
- **Marvell QL41232HLCU Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Marvell QL41232HQCU Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter**
- **Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE**
- **Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE**
- **Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Xilinx X2522-25G Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**

Technical Specifications

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

- **Broadcom BCM5719 Ethernet 1Gb 4-port Base-T Adapter for HPE**
- **Broadcom BCM5719 Ethernet 1Gb 4-port Base-T OCP3 Adapter for HPE**
- **Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE**
- **Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE**
- **Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE**
- **Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE**
- **Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE**
- **Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE**
- **Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE**
- **Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE**
- **Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE**
- **Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE**
- **Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE**
- **Intel E810-XXVDA4T Ethernet 10/25Gb 4-port SFP28 MCLK Adapter for HPE**
- **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**
- **Marvell QL41132HLRJ Ethernet 10Gb 2-port BASE-T Adapter for HPE**
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- **Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter**
- **Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE**
- **Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE**
- **Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE**
- **Xilinx X2522-25G Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**
- **Xilinx X2522-25G-PLUS Ethernet 10/25Gb 2-port SFP28 Adapter for HPE**

Technical Specifications

Transceiver and Cable Options

Please refer to matrix: **https://psnow.ext.hpe.com/doc/a00002507enw**

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 (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
06-May-2024	Version 24	Changed	Overview section was updated.
01-Apr-2024	Version 23	Changed	Added Xilinx X2 support to Gen11 DL360, DL380, removed OBS products
04-Dec-2023	Version 22	Changed	Introduced new sections for SKUs on Gen11, Service and Support Section was updated
10-Jul-2023	Version 21	Changed	Standard Features, Service and Support Sections were updated
05-Jun-2023	Version 20	Changed	Standard Features section was updated
14-Nov-2022	Version 19	Changed	Updated drivers and support download links
03-Oct-2022	Version 18	Changed	Models were updated
06-Sep-2022	Version 17	Changed	Added P26269-B21, P26264-B21, P41636-B21, and updated links
06-Jun-2022	Version 16	Changed	Added P51178-B21, P51181-B21
02-May-2022	Version 15	Changed	SKUs were removed and updated
04-Apr-2022	Version 14	Changed	Models were updated
07-Feb-2021	Version 13	Changed	Added P42041 and P42044 CX6-LX 10/25Gb 2-port
01-Nov-2021	Version 12	Changed	Standard Features, Service and Support Sections were updated
04-Oct-2021	Version 11	Changed	Standard Features Section was updated
02-Aug-2021	Version 10	Changed	Models Section and SKUs were updated
07-Jun-2021	Version 9	Changed	Added NPAR and Legacy BIOS PXE Boot features to selected NICs
17-May-2021	Version 8	Changed	Overview Section and Models were updated
06-Apr-2021	Version 7	Changed	Models and Standard Features Sections were updated
05-Oct-2020	Version 6	Changed	Overview and Standard Features Sections were updated
01-Jun-2020	Version 5	Changed	Standard Features Section was updated, added feature definition
20-Apr-2020	Version 4	Changed	Standard Features Section was updated
06-Apr-2020	Version 3	Changed	Added tables for feature, add X2522-25G
16-Dec-2019	Version 2	Changed	Overview and Technical Specifications sections were updated
02-Dec-2019	Version 1	New	New QuickSpecs

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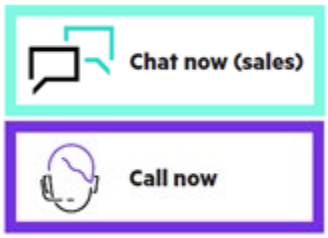

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