

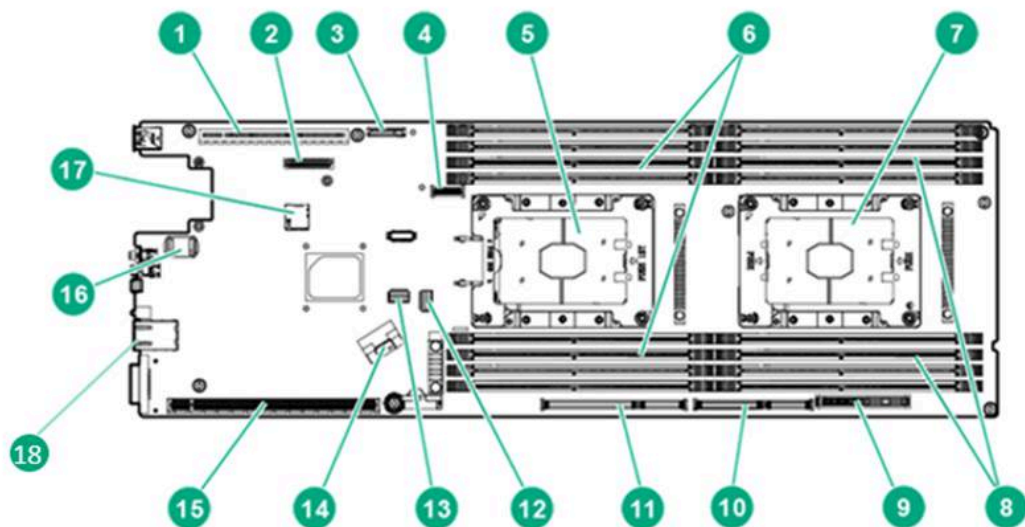
Overview

HPE ProLiant XL190r Gen10 Server

The ProLiant XL190r Gen10 Server is a 2U half-width, 2P server with the same configuration options as the XL170r for CPU and memory, but has additional PCIe slots in multiple configurations providing support for additional expansion cards and support for two (2) accelerators per server.

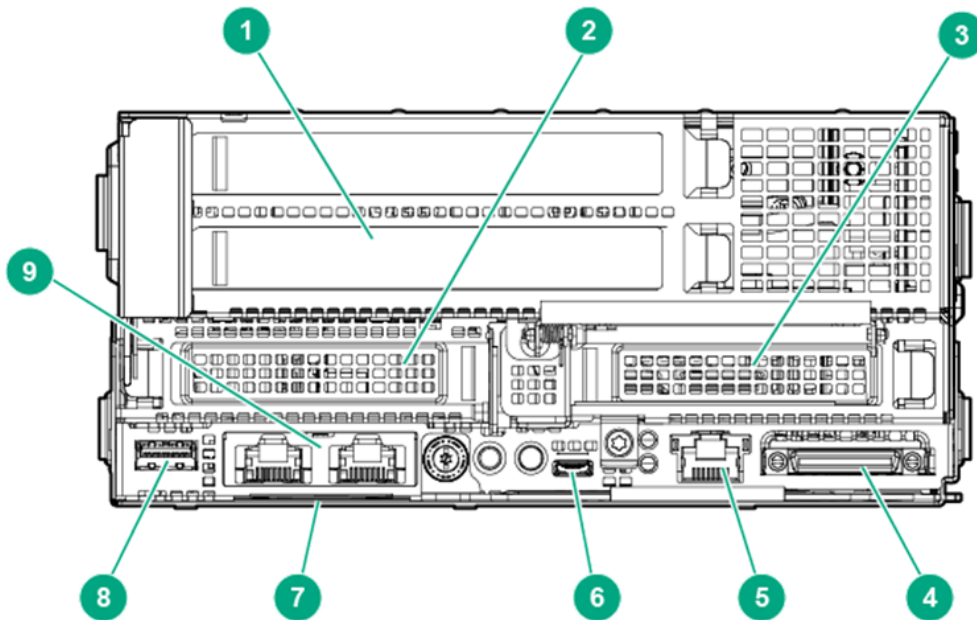
The dense and flexible HPE Apollo 2000 Chassis can accommodate up to two 2U hot-swap server trays to meet various workload needs while lowering TCO.

Rack scale power efficiency is fueled by the optional HPE Apollo Platform Manager for rack, chassis, server and component level management.



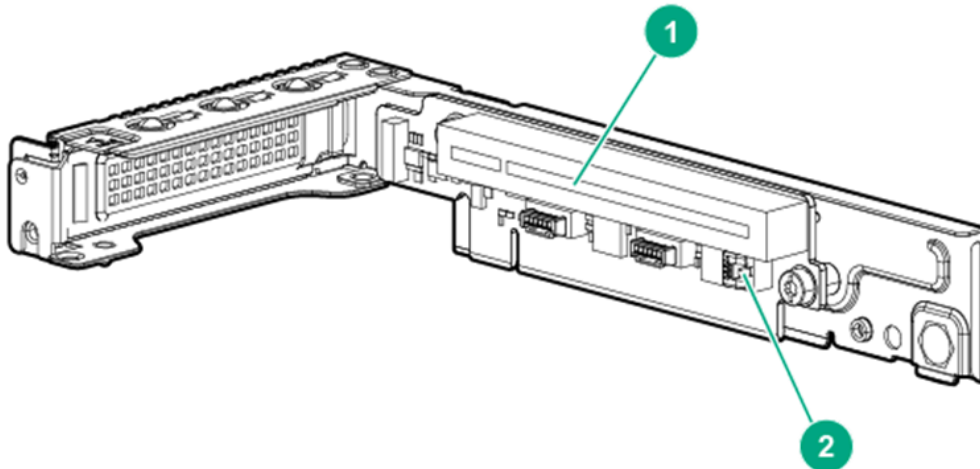
Front View

Item	Description	Item	Description
1	Primary riser slot 1	10	Secondary riser slot 4
2	mLOM connector	11	Secondary riser slot 3
3	System battery	12	Slimline connector (SATA x4)
4	M.2 SSD riser connector	13	System maintenance switch
5	Processor 1	14	Slimline connector (SATA x8)
6	DIMMs for processor 1	15	Secondary riser slot 2
7	Processor 2	16	TPM connector
8	DIMMs for processor 2	17	microSD slot
9	Bayonet board slot	18	iLO dedicated port



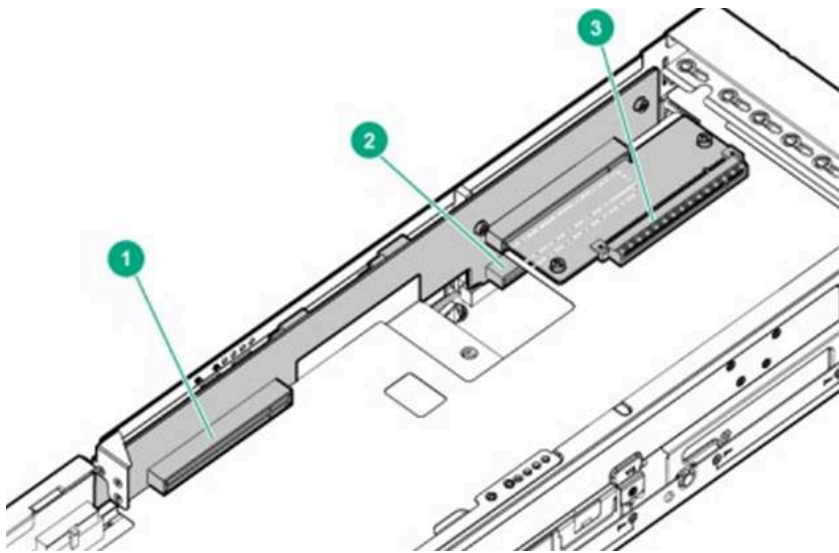
2U Node Rear Panel Components

Item	Description	Item	Description
1	Dual Width GPU slot 3	6	iLO service port with micro USB connector
2	Slot 1	7	Node serial number and iLO label pull tab
3	Slot 2	8	USB 3.0 connector
4	SUV connector	9	Media module
5	iLO Management port		



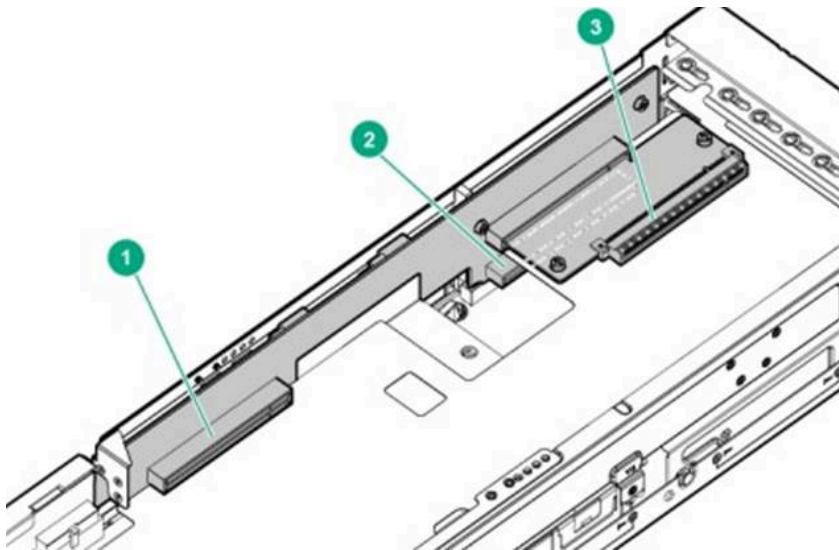
**Single-Slot left PCI Riser Cage Assembly
(874296-B21)**

Item	Form factor	Slot number	Slot description
1	Storage controller or low-profile PCIe NIC card	1	PCIe3 x16 (16, 8, 4, 1) for Processor 1
2	N/A	N/A	Storage backup power connector



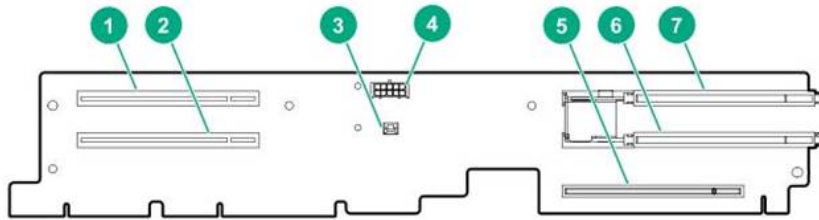
**2U NVMe / FlexibleLOM Secondary Riser Cage Assembly
(874849-B21) / (874847-B21)**

Item	Form factor	Slot number	Slot description
1	Accelerator Card	4	PCIe3 x16 (16, 8, 4, 1) for Processor 2
2	FlexibleLOM	2	PCIe3 x16 (8, 4, 1) for Processor 1
3	Accelerator Card	3	PCIe3 x16 (16, 8, 4, 1) for Processor 1



**2U P2 Secondary Riser Cage Assembly
(874851-B21)**

Item	Form factor	Slot number	Slot description
1	Accelerator Card	4	PCIe3 x16 (16, 8, 4, 1) for Processor 2
2	Low-Profile PCIe Card	2	PCIe3 x16 (16, 8, 4, 1) for Processor 2
3	Accelerator Card	3	PCIe3 x16 (16, 8, 4, 1) for Processor 2



**Right 4xGPU Riser Kit
(P19233-B21)**

Item	Form factor	Slot number	Slot description
1	Single Width Accelerator Card	6	PCIe3 x16 (16, 8, 4, 1) for Processor 2
2	Single Width Accelerator Card	4	PCIe3 x16 (16, 8, 4, 1) for Processor 2
3	-	-	Storage controller backup power connector
4	-	-	GPU power cable connector
5	Low profile PCIe Card	2	PCIe3 x16 (16, 8, 4, 1) for Processor 2
6	Single Width Accelerator Card/Infiniband Adapter	3	PCIe3 x16 (16, 8, 4, 1) for Processor 1
7	Single Width Accelerator Card/Infiniband Adapter	5	PCIe3 x16 (8, 4, 1) ¹ for Processor 1

Notes: Secondary riser slot 5 supports x8 card only

Whats New

- New HPE Persistent Memory 128GB/256GB/512GB 2666 featuring Intel® Optane™ DC persistent memory
- HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 Adapter
- New 4xGPU Riser Kit - Support for up to 4 GPUs per XL190r node

Standard Features

Notes: For the Standard Features shipped in the Factory Integrated Models, please see the "Configuration Information Factory Integrated Models" section.

1st Generation Intel® Xeon® Scalable Processor Family							
Processors Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	QPI	DDR4/ MT/s	Memory per socket
Platinum Processors							
Platinum 8160 Processor	2.1 GHz	24	33.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold Processors							
Gold 6152 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6148 Processor	2.4 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6144 Processor	3.5GHz	8	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6142 Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6140 Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB

Gold 6138 Processor	2.0 GHz	20	27.50 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6136 Processor	3.0 GHz	12	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6134 Processor	3.2 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6132 Processor	2.6 GHz	14	19.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6130 Processor	2.1 GHz	16	22.00 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6128 Processor	3.4 GHz	6	19.25 MB	115W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6126 Processor	2.6 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 5122 Processor	3.6 GHz	4	16.50 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768 GB
Gold 5120 Processor	2.2 GHz	14	19.25 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768 GB
Gold 5119T Processor	1.9 GHz	14	19.25 MB	85W	2 @ 10.4 GT/s	2400 MT/s	768 GB
Gold 5118 Processor	2.3 GHz	12	16.50 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768 GB
Gold 5115 Processor	2.4 GHz	10	13.75 MB	85W	2 @ 10.4 GT/s	2400 MT/s	768 GB
Silver Processors							
Silver 4116 Processor	2.1 GHz	12	16.50 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Silver 4112 Processor	2.6 GHz	4	8.25 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Silver 4110 Processor	2.1 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Silver 4109T Processor	2.0 GHz	8	11.00 MB	70W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Silver 4108 Processor	1.8 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768 GB
Bronze Processors							
Bronze 3104 Processor	1.7 GHz	6	8.25 MB	85W	2@9.6 GT/s	2133 MT/s	768 GB
Notes: Bronze Processors not supported in EMEA							

2nd Generation Intel® Xeon® Scalable Processor Family

Processors Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	QPI	DDR4/ MT/s	Memory per socket
Platinum Processors							
Platinum 8253 Processor	2.2 GHz	16	22.00 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Notes: Support for HPE Persistent Memory featuring Intel® Optane™ DC persistent memory							
Gold Processors							
Gold 6252 Processor	2.1 GHz	24	35.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6248 Processor	2.5 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB

Gold 6244 Processor	3.6GHz	8	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6242 Processor	2.8 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6240 Processor	2.6 GHz	18	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6238 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6234 Processor	3.3 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6230 Processor	2.1 GHz	20	27.50 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6226 Processor	2.7 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 5222 Processor	3.8 GHz	4	16.50 MB	105W	2 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 5220 Processor	2.2 GHz	18	24.75 MB	125W	2 @ 10.4 GT/s	2666 MT/s	1 TB
Gold 5218 Processor	2.3 GHz	16	22 MB	125W	2 @ 10.4 GT/s	2666 MT/s	1 TB
Gold 5217 Processor	3.0 GHz	8	11 MB	115W	2 @ 10.4 GT/s	2666 MT/s	1 TB
Gold 5215 Processor	2.5 GHz	10	11 MB	85W	2 @ 10.4 GT/s	2666 MT/s	1 TB
Gold 6230R Processor	2.1 GHz	26	35.75 MB	150W	2 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6226R Processor	2.9 GHz	16	22MB	150W	2 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 5220R Processor	2.2 GHz	24	35.75 MB	150W	2 @ 10.4 GT/s	2667 MT/s	1 TB
Gold 5218R Processor	2.1 GHz	20	27.5 MB	125W	2 @ 10.4 GT/s	2667 MT/s	1 TB

Notes: support for HPE Persistent Memory featuring Intel® Optane™ DC persistent memory

Silver Processors

Silver 4216 Processor	2.1 GHz	16	22 MB	100W	2 @ 10.4 GT/s	2400 MT/s	1 TB
Silver 4215 Processor	2.5 GHz	8	11 MB	85W	2 @ 10.4 GT/s	2400 MT/s	1 TB
Silver 4214 Processor	2.2 GHz	12	16.5 MB	85W	2 @ 10.4 GT/s	2400 MT/s	1 TB
Silver 4210 Processor	2.2 GHz	10	13.75 MB	85W	2 @ 10.4 GT/s	2400 MT/s	1 TB
Silver 4208 Processor	2.1 GHz	8	11 MB	85W	2 @ 10.4 GT/s	2400 MT/s	1 TB
Silver 4215R Processor	3.2 GHz	8	11 MB	130W	2 @ 9.6 GT/s	2400 MT/s	1TB
Silver 4214R Processor	2.4 GHz	12	16.5 MB	100W	2 @ 9.6 GT/s	2400 MT/s	1 TB
Silver 4210R Processor	2.4 GHz	10	13.75 MB	100W	2 @ 9.6 GT/s	2400 MT/s	1 TB

Notes: 4215 supports HPE Persistent Memory featuring Intel® Optane™ DC persistent memory

Bronze Processors

Bronze 3204 Processor	1.9 GHz	6	8.25 MB	85W	2 @ 9.6 GT/s	2133 MT/s	1 TB
Bronze 3206R Processor	1.9 GHz	8	11 MB	85W	2 @ 9.6 GT/s	2133 MT/s	1 TB

Notes: Bronze Processors not supported in EMEA

Chipset

Intel® C622 Chipset (Intel EY82C622 PCH)

Notes: For more information regarding Intel® chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>

On System Management Processor

HPE iLO 5 ASIC.

Notes: Read and learn more in the [iLO QuickSpecs](#)

Memory

Type	HPE SmartMemory
	DDR4 Load Reduced (LRDIMM), or Registered (RDIMM)
DIMM Slots Available	16 DIMM Slots available
Maximum (LRDIMM)	1.5TB (Skylake) and 2TB (Cascade Lake)
HPE Persistent Memory	1024GB Max per processor/socket

Notes:

- HPE memory from previous generation servers are not fully compatible with the HPE ProLiant XL190r Gen10 Server.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required.
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server
- HPE Persistent Memory featuring Intel® Optane™ DC persistent memory only supported with select 2nd generation Intel
- Xeon Scalable Series Processors ONLY ((82xx/62xx/52xx/4215) and can only be mixed with either RDIMMs or LRDIMMs.
- For information regarding HPE Persistent Memory visit: <http://www.hpe.com/info/persistentmemory>
- The maximum memory speed is a function of the memory type, memory configuration, and processor model. Please see Memory Population Table or the Online Memory Configuration Tool at:

<http://www.hpe.com/servers/servermemoryconfigurator>

- Memory DIMM availability with a server platform is dependent upon completion of certification testing.

Memory Protection

For details on the HPE Server Memory Options RAS feature, visit:

<http://www.hpe.com/docs/memory-ras-feature>.

Expansion Slots (EE)

Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
1	PCIe 3.0	x16	CPU1	x16	Low profile
FlexibleLOM	PCIe 3.0	X8	CPU1	x16	FlexibleLOM
FlexibleLOM	PCIe 3.0	X16	CPU2	x16	Low profile
3	PCIe 3.0	X16	CPU1/ CPU2	X16	Full height/max 10.5" long
4	PCIe 3.0	X16	CPU2	X16	Full height/max 10.5" long

Notes:

- *Indicates the number of physical electrical lanes running to the connector.
 - Expansion slot 1 requires ordering HPE XL1x0r Gen10 Left LP Riser Kit (874296-B21)
 - FlexibleLOM require ordering HPE XL190r Gen10 FLOM Riser Kit (874847-B21)
 - Expansion slot 2 HPE XL190r Gen10 P2 Riser Kit (874851-B21)
 - Expansion slot 3 and 4 requires ordering HPE XL190r Gen10 FLOM Riser Kit (874847-B21) or HPE XL190r Gen10 P2 Riser Kit (874851-B21)
-

4 GPU Riser (EE)

Expansion Slot #	Technology	Bus Width*	Source	Connector Width	Form Factor
2	PCIe 3.0	X16	CPU2	X16	Low Profile
3	PCIe 3.0	X16	CPU1	X16	SW FHFL(L≤10.5")
4	PCIe 3.0	X16	CPU2	X16	SW FHFL(L≤10.5")
5	PCIe 3.0	X8	CPU1	X16	SW FHFL(L≤10.5")
6	PCIe 3.0	X16	CPU2	X16	SW FHFL(L≤10.5")

Notes:

- *Indicates the number of physical electrical lanes running to the connector.
 - Expansion slot above require ordering HPE XL190r Gen10 Right 4xGPU Riser Kit (P19233-B21)
 - Expansion slot 2 can support Controllers, Networking, Infiniband
 - Expansion slots 4 & 6 only support NVIDIA T4 & RTX4000 GPU accelerators
 - Expansion slots 3 & 5 can support NVIDIA T4 & RTX4000 GPU accelerators, Infiniband or PCIe accelerator
-

Storage Controller

Converged Network Adapters

- HPE StoreFabric CN1200E 10Gb CNA
- HPE StoreFabric CN1200E-T 10Gb CNA
- HPE CN1100R 2P Converged Network Adapter
- HPE StoreFabric CN1100R-T 10Gb CAN

Smart Array Controller

- HPE Smart Array E208i-p SR Gen10 Controller
- HPE Smart Array E208e-p SR Gen10 Controller
- HPE Smart Array P408e-p SR Gen10 Controller
- HPE Smart Array P408i-p SR Gen10 Controller
- HPE Smart Array P824i-p MR Gen10 Ctrlr

Host Bus Adapter

- HPE SN1600Q 32Gb 1p FC HBA
- HPE SN1600E 32Gb 1p FC HBA
- HPE SN1600E 32Gb 2p FC HBA
- HPE SN1200E 16Gb 2p FC HBA
- HPE SN1100Q 16Gb 1p FC HBA

Storage Controller Cable Kits

- HPE 96W Smart Storage Battery 145mm Cable
- HPE XL190r Gen10 S100i SATA Cable Kit
- HPE XL190r Lft E208ip/P408ip Cbl Kit
- HPE XL190r Rght E208ip/P408ip Cbl Kit

Notes: AHCI mode is default settings and to convert to S100i mode, HPE FIO Enable Smart Array SW RAID needs to be selected

Maximum Internal Storage		
Drive	Capacity	Configuration
Hot Plug LFF SAS 7.2k	60TB	6x 10TB
Hot Plug LFF SAS 15k	5.4TB	6 x 900GB
Hot Plug LFF SATA	60TB	6 x 10TB
Hot Plug LFF SATA SSD	23.04TB	6x 3.84TB
Hot Plug LFF SAS SSD	9.6TB	6x 1.6TB
Hot Plug SFF SAS 7.2k	24TB	12x 2TB
Hot Plug SFF SAS 10k	28.8TB	12x 2.4TB
Hot Plug SFF SAS 15k	10.8TB	12x 900GB
Hot Plug SFF SATA	24TB	12x 2TB
Hot Plug SFF SATA SSD	24.08TB	12x 3.8TB
Hot Plug SFF SAS SSD	46.08TB	12x 3.84TB
NVMe x4 MU SFF SCN DS SSD	16TB	4x 4TB

Internal Storage Devices

Internal MicroSD slot

Interfaces	
FlexibleLOM	HPE ProLiant Gen10 servers offer a new networking technology-Flexible Network Technology. The HPE ProLiant Gen10 server offers the customer the choice of 1Gigabit, 10Gigabit, 25Gigabit, InfiniBand, Omni-Path or FlexibleLOM solutions depending on workload. For further details on the choices, see FlexibleLOM in the Networking Section of this document.
KVM	Serial USB Video Port (SUV)
MicroSD	1 (internal)
USB Ports	2 (external via SUV); 1 USB 3.0 (external);
HPE iLO Remote Management Network Port	Aggregated via HPE Apollo 2000 Chassis; or on board dedicated iLO NIC port
Health LED	1
Power	1
UID	1
Do not remove LED	1

Operating Systems and Virtualization Software Support for ProLiant Servers

- Windows Server 2012 R2 (Most Recent Version)
- Windows Server 2016 (Most Recent Version)
- Windows Server 2019 (Most Recent Version)
- VMware ESXi 6.0 U3
- VMware ESXi 6.5 U2
- VMware ESXi 6.7 U1
- Red Hat Enterprise Linux (RHEL) 7.6
- SUSE Linux Enterprise Server (SLES) 12 SP4
- SUSE Linux Enterprise Server (SLES) 15 SP1
- CentOS

Notes:

- CentOS not directly supported / Community Supported (Based on RHEL so RHEL testing and enablement applicable to CentOS) CentOS 7.6

- For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server.

https://techlibrary.hpe.com/us/en/enterprise/servers/supportmatrix/certification.aspx?var=XL190r_Gen10

Industry Standard Compliance

- ACPI 6.2 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant (internal); USB 2.0 Compliant (external ports via SUV)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API

Power Specifications

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at URL:

<http://www.hpe.com/servers/powersupplies>

Notes: Power Specification and Technical Content for supported power supplies can be found at: **<https://www.hpe.com/info/qs>**

Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)
- HPE iLO 5 On System Management Memory
- 32 MB Flash
- 512 MB DDR 3 with ECC (112 MB after ECC and video)

Note	Expansion Slot #	Technology	Bus Width*	Connector Width	Form Factor	Part Number
CPU1	1	PCIe3.0	X16	X16	Low Profile	874296-B21
CPU1	FlexibleLOM	PCIe3.0	X8	X16	FlexibleLOM	874847-B21
CPU1	3	PCIe3.0	X16	X16	FHFLDW	

CPU2	4	PCLe3.0	X16	X16	FHFLDW	874851-B21
CPU2	2	PCLe3.0	X16	X16	Low Profile	
CPU2	3	PCLe3.0	X16	X16	FHFLDW	
CPU2	4	PCLe3.0	X16	X16	FHFLDW	
CPU1	3	PCle 3.0	X16	X16	FHFLSW	P19233-B21
CPU2	4	PCle 3.0	X16	X16	FHFLSW	
CPU1	5	PCle 3.0	X8	X16	FHFLSW	
CPU2	6	PCle 3.0	X16	X16	FHFLSW	

Notes: *Indicates the number of physical electrical lanes running to the connector

HPE Server UEFI /Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

Notes: The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hpe.com/servers/uefi>.

UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:

- Secure Boot and Secure Start enable for enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant.
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:

- TPM 2.0 Support
- NVMe Boot Support
- Platform Trust Technology (PTT) can be enabled.
- iSCSI Software Initiator Support.
- HTTP/HTTPS Boot support as a PXE alternative.
- Boot support for option cards that only support a UEFI option ROM

Notes:

- For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.
- UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant XL190r Gen10 Server.

Form Factor

The ProLiant XL190r Gen10 Server is a single-slot 2U node for the HPE Apollo 2000 Chassis.

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO.

Learn more at: <http://www.hpe.com/info/iilo>

UEFI

Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI).

Learn more at: <http://www.hpe.com/servers/uefi>

iLO RESTful API

iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at: <http://www.hpe.com/info/restfulapi>

Server Utilities

Active Health System

The HPE Active Health System (AHS) is an essential component of iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at: <http://www.hpe.com/servers/ahs>

Active Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations. Learn more at <http://www.hpe.com/servers/ahsv>

Smart Update

Keep your servers up to date with HPE's Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP)

iLO Amplifier Pack

Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities.

<http://www.hpe.com/servers/iLOamplifierpack>

HPE iLO Mobile Application

Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. <http://www.hpe.com/info/ilo/mobileapp>

RESTful Interface Tool

RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. <http://www.hpe.com/info/resttool>

Scripting tools

Provision 1 to many servers using your own scripts to discover and deploy with Scripting Toolkit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. <http://www.hpe.com/servers/powershell>

HPE OneView Standard

HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE Servers generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. <http://www.hpe.com/info/oneview>

HPE Systems Insight Manager (HPE SIM)

Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. Also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates.

www.hpe.com/info/hpesim

Server Management

HPE iLO Advanced

HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

HPE iLO Advanced Premium Security Edition

HPE iLO Advanced Premium Security Edition for iLO 5 includes iLO Advanced License plus high-end security modes, unique security capabilities, like Automatic FW recovery; Runtime FW verification, and Secure erase <http://www.hpe.com/servers/ilopremium>

HPE iLO Scale-Out

HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications.

HPE OneView Advanced

HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen9 and Gen10 servers.

<http://www.hpe.com/info/oneview>

HPE Performance Cluster Management (HPCM)

HPE Performance Cluster Manager is a fully integrated system management solution offering all the functionalities you need to manage your Linux®-based high performance computing (HPC) clusters. The software provides system setup, hardware monitoring and management, image management and software updates as well as power management for systems of any scale - up to 100,000 nodes.

<http://www.hpe.com/software/hpcm>

HPE Performance Software-Message Passing Interface

The HPE Performance Software-**Message Passing Interface (MPI)** is an MPI development environment designed to enable the development and optimization of high performance computing (HPC) applications. The HPE Performance Software-MPI leverages a scalable MPI library and boosts performance of existing applications without requiring recompilation.

Software Licenses

- HPE iLO Standard (embedded in server)
- HPE iLO Advanced (requires license)
- HPE iLO Advanced Premium Security Edition (requires license)
- Intelligent Provisioning (embedded in server)
- HPE OneView Standard (requires download)
- HPE OneView Advanced (requires license)

For more information on Server Management - <http://www.hpe.com/info/servermanagement>

For more information on HPE iLO Licensing

https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-c04951959&docLocale=en_US

For more information on HPE OneView - <http://www.hpe.com/info/hpeoneview>

Security

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- Support for Commercial National Security Algorithms (CNSA)
- iLO Advanced Premium Security Edition
- Granular control over iLO interfaces
- Common Access Card (CAC) 2-factor Authentication
- Tamper-free updates - components digitally signed and verified
- Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
- TPM (Trusted Platform Module) 1.2 option
- TPM (Trusted Platform Module) 2.0 option Bezel Locking Kit
- Intrusion Security Kit option
- Runtime Firmware Validation - Periodically scan essential firmware for compromised code during runtime

Warranty

This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners (may vary by region).

Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty.

Notes: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<http://www.hpe.com/support/ProLiantServers-warranties>

Warranty and Services - Options

Notes: HPE ProLiant XL190r Gen10 Servers are covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support: <http://www.hpe.com/h20195/V2/GetPDF.aspx/4AA4-8876ENW.pdf>

Service and Support

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake 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 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

Managed services to run your IT operations

HPE GreenLake Management Services provides 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.

Recommended Services

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care 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 Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care 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 Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care 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/completecure>

Parts and Materials

Hewlett Packard Enterprise 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.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Configuration Information

Notes:

- This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- FIO indicates that this option is only available as a factory installable option.

- HPE Apollo 2000 Chassis is required to support the server. Refer to their QuickSpecs for additional information.

- HPE Apollo 2000 Chassis

Step 1: Base Configuration (Choose one of the CTO Models below)

HPE CTO Model

HPE ProLiant XL190r Gen10 2U Node Configure-to-order Server

867056-B21

HPE BTO Model

HPE XL190r Gen10 Server for Ezmeral Container Platform

R0R00A

Step 2: Choose Required Options (only one from each category unless otherwise noted)

Processors

Intel-Platinum Processors (1st Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Platinum 8160 (2.1GHz/24-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10

874294-L21

Intel-Platinum Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P11835-L21
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Intel-Gold Processors (1st Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Gold 6144 (3.5GHz/8-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	880671-L21
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Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	874290-L21
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Intel Xeon-Gold 6126 (2.6GHz/12-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	874283-L21
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Intel Xeon-Gold 5122 (3.6GHz/4-core/105W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	874282-L21
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Intel Xeon-Gold 5119T (1.9GHz/14-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	882040-L21
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Intel Xeon-Gold 5118 (2.3GHz/12-core/105W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	879581-L21
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Intel-Gold Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10329-L21
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Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10328-L21
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Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10327-L21
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Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10326-L21
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Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10325-L21
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Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P12326-L21
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Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P12325-L21
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Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10324-L21
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Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P12324-L21
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Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P11834-L21
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Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10323-L21
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Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10322-L21
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Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10321-L21
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Intel Xeon-Gold 5215M (2.5GHz/10-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10320-L21
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Intel Xeon-Gold 5218R (2.1GHz/20-core/125W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P19269-L21
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Intel Xeon-Gold 5220R (2.2GHz/24-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P19270-L21
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Intel Xeon-Gold 6226R (2.9GHz/16-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P25126-L21
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Intel Xeon-Gold 6230R (2.1GHz/26-core/150W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P25127-L21
Intel-Silver Processors (1st Generation Intel® Xeon® Scalable Processor Family)	
Intel Xeon-Silver 4112 (2.6GHz/4-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	879597-L21
Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	879595-L21
Intel Xeon-Silver 4108 (1.8GHz/8-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	879591-L21
Intel-Silver Processors (2nd Generation Intel® Xeon® Scalable Processor Family)	
Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10.	P10319-L21
Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10318-L21
Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10317-L21
Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10316-L21
Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10315-L21
Intel Xeon-Silver 4210R (2.4GHz/10-core/100W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P19265-L21
Intel Xeon-Silver 4214R (2.4GHz/12-core/100W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P19266-L21
Intel Xeon-Silver 4215R (3.2GHz/8-core/130W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P25128-L21
Intel-Bronze Processors (2nd Generation Intel® Xeon® Scalable Processor Family)	
Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P10314-L21
Intel Xeon-Bronze 3206R (1.9GHz/8-core/85W) FIO Processor Kit for HPE ProLiant XL1x0r Gen10	P19263-L21

Notes:

- Must select one xxxxxx-L21 processor. If one processor is desired, select one xxxxxx-L21. If two processors are desired, select one corresponding xxxxxx-B21. Mixing of processor speeds and types is not supported.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed. For the maximum supported memory speeds for each processor listed above, please reference the 'Memory Speed by Processor Model' table in the Memory section of the QuickSpecs.
- Bronze Processors not supported in EMEA

HPE Memory

Notes:

- 2nd Generation Intel® Xeon® processors require DDR4-2933 Memory Kits.
- 1st Generation Intel® Xeon® processors require DDR4-2666 Memory Kits.
- Depending on the memory configuration and processor model, the memory speed may run at 2666MHz, 2400MHz, and 2133MHz. Please see Memory Population Table or the Online Memory Configuration Tool at:

<http://h22195.www2.hpe.com/MemoryTool/Home/Legal>

Registered DIMMs (RDIMMs) - DDR4-2666

HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-H21

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-H21
Registered DIMMs (RDIMMs) - DDR4-2933	
HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-H21
Load Reduced DIMMs (LRDIMMs) - DDR4-2666	
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-H21

Load Reduced DIMMs (LRDIMMs) - DDR4-2933

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-H21
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HPE Persistent Memory (Intel Optane)

Intel Optane 128GB persistent memory 100 Series for HPE	835804-B21
Intel Optane 256GB persistent memory 100 Series for HPE	835807-B21
Intel Optane 512GB persistent memory 100 Series for HPE	835810-B21

Notes:

- A max of 2 HPE Persistent Memory DIMMs per processor supported with select 2nd Generation Intel Xeon Scalable Series Processors ONLY (82xx/62xx/52xx/4215) and require either RDIMMs or LRDIMMs to be configured.
- For information regarding HPE Persistent Memory visit: <http://www.hpe.com/info/persistentmemory>
- Minimum 1 DIMMs are required per processor; up to 8 DIMMs per processor.
- If Fabric CPU is installed, minimum of 32GB is required
- A maximum of 16 DIMMs are supported per XL170r server tray (or 8 DIMMs max per processor).
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- HPE memory from previous generation servers is not compatible with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. For additional information, please see the HPE SmartMemory QuickSpecs at: <https://www.hpe.com/h20195/v2/GetPDF.aspx/c04355083.pdf>
- For the maximum supported memory speeds for each processor listed above, please reference the 'Memory Speed by Processor Model' table in the Memory section of the QuickSpecs.
- The processor model as well as the memory configuration determines the maximum speed memory can operate. Please see the see the "Memory" section later in this document.

HPE PCIe riser kits

HPE XL1x0r Gen10 Left Riser FIO Blank Kit	874805-B21
Notes: Minimum 2 Riser Cards must be selected per server.	
HPE XL1x0r Gen10 Left Low Profile Riser Kit	874296-B21

Notes:

- HPE XL190r Gen10 P2 Riser Kit (874851-B21) is selected, total available PCIe slots is four (4x16) total available FlexibleLOM slots is 0.
- When HPE XL1x0r Gen10 Left Low Profile Riser Kit & HPE XL190r Gen10 FLOM Riser Kit (874847-B21) is selected, total available PCIe slots is three (3x16) total available FlexibleLOM slots is one.

- When HPE XL1x0r Gen10 Left Low Profile Riser Kit & HPE XL190r Gen10 16NVMe FLOM Riser Kit (874849-B21) is selected, total available PCIe slots is three (3x16) total available FlexibleLOM slots is one.

HPE XL190r Gen10 P2 Riser Kit 874851-B21

Notes: Only 874851-B21 can support low-profile PCIe cards. This riser kit only supports a 1:2 CPU:GPU configuration.

HPE XL1x0r Gen10 M2 (NGFF) Riser Kit 874853-B21

Notes: Must have 874853-B21 to support the M.2 devices

HPE XL190r Gen10 16NVMe FlexibleLOM Riser Kit 874849-B21

HPE XL190r Gen10 FlexibleLOM Riser Kit 874847-B21

Notes:

- Only 874849-B21 and 874847-B21 can support a FLOM adapter.

- 874849-B21 and 874847-B21 only support 1:1 CPU:GPU configuration.

HPE XL190r Gen10 Right 4x GPU Riser Kit P19233-B21

Notes: This riser kit can support up to four GPUs and one low profile card

HPE Storage Controllers

Notes: Required to select one of the following when SAS drives are installed on the server.

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller 804394-B21

Notes: Supports up to 8 internal SAS/SATA Drives. HPE XL190r Left E208ip/P408ip Cable Kit (874787-B21) or HPE XL190r Right E208i/P408i Cable Kit (874791-B21) must be ordered to support P-series controllers.

HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller 830824-B21

Notes: Supports up to 8 internal SAS/SATA Drives. HPE XL190r Left E208ip/P408ip Cable Kit (874787-B21) or HPE XL190r Right E208i/P408i Cable Kit (874791-B21) must be ordered to support P-series controllers

HPE FIO Enable Smart Array SW RAID 784308-B21

Notes: This option enables the Smart Array Software RAID capability; also referenced as B140i or S100i). HPE XL190r Gen10 S100i SATA Cable Kit (874305-B21) must be ordered with this selection. This option may not be selected if HPE Legacy Mode Setting (758959-B22) is selected.

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit P01366-B21

Notes: The battery cable kit needs to be selected if the node has the P series controller in the node configuration

HPE XL190r Gen10 S100i SATA Cable Kit 874307-B21

Notes:

- Required to be selected when S100i is the primary controller. This cable supports to connect to SATA drives. Max = 1 of cable kit per Node can be selected.

- R2200 + 2U node - Supports max of 6 SATA hard drive per node

- R2600 + 2U Node - Supports 6 SATA hard drives per node

HPE XL190r Left E208ip/P408ip Cable Kit 874787-B21

Notes: Required to be selected when E208i or P408i is selected in the configuration along with HPE XL1x0r Gen10 Left LP Riser Kit excluding Fabric CPU enablement kit in the configuration

HPE XL190r Right E208ip/P408ip Cable Kit 874791-B21

Notes:

- Required to be selected when E208i or 408i is selected along with one the below mentioned Riser including the Fabric CPU enablement kit in the configuration.
- (Fabric CPU enablement kit gets installed in the slot1 and hence the controller can be installed only in any one of the right riser (Slot2) mentioned below)
- HPE XL190r Gen10 FLOM Riser Kit
- HPE XL190r Gen10 P2 LP Riser Kit
- HPE XL190r 16NVMe Gen10 P2 LP Riser Kit

Step 3: Choose Additional Factory Integrated Options (only one from each category unless otherwise noted)

BIOS Model

HPE Legacy FIO Mode Setting 758959-B22

Notes: The system BIOS provides two different Boot Modes: UEFI (Standard) and Legacy BIOS (optional) (758959-B22)

When this option is selected, then BIOS need to be switched from default UEFI Mode to Legacy Mode

HPE Security Hardware

HPE Gen10 TPM 1.2 FIO Setting 872108-B21

Notes: This can be selected only when TPM 2.0 Gen10 Kit 864279-B21 is selected in the configuration

HPE Converged Infrastructure Management Software

HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU P8B31A

HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU E5Y43A

Notes: If E208i is the primary controller and if HPE Mfg FIO Enable HBA Mode Setting is selected, then RAID is not allowed - can only be selected with E208i only

Raid Settings

HPE RAID 0 Drive 1 FIO Setting 339777-B21

HPE RAID 1 Drive 1 FIO Setting 339778-B21

HPE RAID 5 Drive 1 FIO Setting 339779-B21

HPE Raid 5 w/SP Drive 1 FIO Setting 339780-B21

HPE RAID FIO Advanced Data Guarding Option 339781-B21

HPE Customer Defined RAID Setting Service 389692-B21

Step 4: Choose Additional Options for Factory Integration from Core and Additional Options sections below

Notes: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

Core Options

HPE Processors

Platinum Processors (1st Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Platinum 8160 (2.1GHz/24-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10 874294-B21

Platinum Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P11835-B21
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Gold Processors (1st Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) Processor Kit for HPE ProLiant XL1x0r Gen10	874290-B21
Intel Xeon-Gold 6126 (2.6GHz/12-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	874283-B21
Intel Xeon-Gold 5122 (3.6GHz/4-core/105W) Processor Kit for HPE ProLiant XL1x0r Gen10	874282-B21
Intel Xeon-Gold 6144 (3.5GHz/8-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	880671-B21
Intel Xeon-Gold 5118 (2.3GHz/12-core/105W) Processor Kit for HPE ProLiant XL1x0r Gen10	879581-B21

Gold Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10329-B21
Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10328-B21
Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10327-B21
Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10326-B21
Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10325-B21
Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) Processor Kit for HPE ProLiant XL1x0r Gen10	P12326-B21
Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) Processor Kit for HPE ProLiant XL1x0r Gen10	P12325-B21
Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10324-B21
Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P12324-B21
Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) Processor Kit for HPE ProLiant XL1x0r Gen10	P11834-B21
Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10323-B21
Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10322-B21
Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10321-B21
Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10320-B21
Intel Xeon-Gold 5218R (2.1GHz/20-core/125W) Processor Kit for HPE ProLiant XL1x0r Gen10	P19269-B21
Intel Xeon-Gold 5220R (2.2GHz/24-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P19270-B21
Intel Xeon-Gold 6226R (2.9GHz/16-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P25126-B21
Intel Xeon-Gold 6230R (2.1GHz/26-core/150W) Processor Kit for HPE ProLiant XL1x0r Gen10	P25127-B21

Silver Processors (1st Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Silver 4112 (2.6GHz/4-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	879597-B21
Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	879595-B21
Intel Xeon-Silver 4108 (1.8GHz/8-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	879591-B21

Silver Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10319-B21
Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10318-B21
Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10317-B21
Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10316-B21
Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10315-B21
Intel Xeon-Silver 4210R (2.4GHz/10-core/100W) Processor Kit for HPE ProLiant XL1x0r Gen10	P19265-B21
Intel Xeon-Silver 4214R (2.4GHz/12-core/100W) Processor Kit for HPE ProLiant XL1x0r Gen10	P19266-B21
Intel Xeon-Silver 4215R (3.2GHz/8-core/130W) Processor Kit for HPE ProLiant XL1x0r Gen10	P25128-B21

Bronze Processors (2nd Generation Intel® Xeon® Scalable Processor Family)

Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P10314-B21
Intel Xeon-Bronze 3206R (1.9GHz/8-core/85W) Processor Kit for HPE ProLiant XL1x0r Gen10	P19263-B21

Notes: Bronze Processors not supported in EMEA

HPE Memory

Registered DIMMs (RDIMMs) - DDR4-2666

HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-H21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-H21

Registered DIMMs (RDIMMs) - DDR4-2933

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-H21

Load Reduced DIMMs (LRDIMMs) - DDR4-2666

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-H21
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Load Reduced DIMMs (LRDIMMs) - DDR4-2933

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-H21
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HPE Persistent Memory (Intel Optane)

Intel Optane 128GB persistent memory 100 Series for HPE	835804-B21
Intel Optane 256GB persistent memory 100 Series for HPE	835807-B21
Intel Optane 512GB persistent memory 100 Series for HPE	835810-B21

Notes:

- A max of 2 HPE Persistent Memory DIMMs per processor supported with select 2nd Generation Intel Xeon Scalable Series Processors ONLY (82xx/62xx/52xx/4215) and require either RDIMMs or LRDIMMs to be configured.

- For information regarding HPE Persistent Memory visit: <http://www.hpe.com/info/persistentmemory>

- CLX-SP processors require 2933 MT/s DIMMS

- Minimum 1 DIMMs are required per processor; up to 8 DIMMs per processor.

- HPE memory from previous generation servers (DDR3) is not compatible with this server. HPE DDR4 SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. For additional information, please see the HPE DDR4 SmartMemory QuickSpecs at:

<http://www8.hpe.com/h20195/v2/GetHTML.aspx?docname=c04380279>

- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.

- Depending on the memory configuration and processor model, the memory speed may run at 2666MHz, 2400MHz, 2133MHz. Please see Memory Population Table or the Online Memory Configuration Tool at:

<http://h22195.www2.hpe.com/MemoryTool/Home/Legal>

HPE Networking

FlexFabric Options

HPE FlexFabric 10Gb 4-port FLR-T 57840S Adapter	764302-B21
HPE FlexFabric 10Gb 2-port FLR-SFP+ 57810S Adapter	700751-B21
HPE FlexFabric 10Gb 2-port FLR-T 57810S Adapter	700759-B21

Ethernet Options

HPE XL1x0r Ethernet 10Gb 2-port 568FLR-MMT Adapter	868227-B21
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HPE Ethernet 10Gb 2-port SFP+ 57810S Adapter	652503-B21
HPE Ethernet 10Gb 2-port BASE-T 57810S Adapter	656596-B21
HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter	817718-B21
HPE Ethernet 10Gb 2-port BASE-T BCM57416 Adapter	813661-B21
HPE Ethernet 1Gb 4-port BASE-T I350-T4V2 Adapter	811546-B21
HPE Ethernet 1Gb 2-port 368T Media Module Adapter	866464-B21
HPE Ethernet 10Gb 2-port 568SFP+ Media Module Adapter	866467-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 MCX4121A-ACFT Adapter	817749-B21
HPE Ethernet 10/25Gb 2-port SFP28 MCX4121A-ACUT Adapter	817753-B21
HPE Ethernet 1Gb 4-port BASE-T BCM5719 Adapter	647594-B21
HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter	817738-B21
HPE Ethernet 10/25Gb 2-port SFP28 QL41401-A2G Adapter	867328-B21
HPE Ethernet 100Gb 1-port QSFP28 MCX515A-CCAT Adapter	874253-B21
HPE Ethernet 10Gb 2-port FLR-T X550-AT2 Adapter	817745-B21
HPE Ethernet 1Gb 4-port FLR-T I350-T4V2 Adapter	665240-B21
HPE Ethernet 1Gb 4-port FLR-T BCM5719 Adapter	629135-B22
HPE Ethernet 10Gb 2-port FLR-T BCM57416 Adapter	817721-B21
HPE Ethernet 10/25Gb 2-port FLR-SFP28 BCM57414 Adapter	817709-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21
HPE Ethernet 10Gb 2-port BASE-T QL41401-A2G Adapter	867707-B21
HPE Ethernet 1Gb 2-port BASE-T BCM5720 Adapter	615732-B21

Ethernet Options - InfiniBand

HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter	872725-H21
HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter	879482-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-H21
HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe3 x16 MCX653105A-HDAT Adapter	P06154-H21
HPE InfiniBand HDR PCIe3 Auxiliary Card with 350mm Cable Kit	P06154-H23
HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe3 x16 MCX653105A-ECAT Adapter	P06250-H21

Notes:

- When ordering P06154-H21, P06154-H23 must also be ordered. P06154-H21 MUST be installed in 2U server slot 1 & P06154-H23 MUST be installed in 2U server slot 2. Cable routing information is given in XL190r Gen10 [user guide](#)
- For 1U, total Slots available for PCIe is 2, total Slots available for FlexLOM is 1. This is a total selection from anything in the following categories: InfiniBand, Networking, Controllers.

HPE Drives

Enterprise - 12G SAS - SFF Drives

HPE 300GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870753-H21
HPE 300GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872475-H21
HPE 600GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872477-H21
HPE 900GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870759-H21
HPE 1.2TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872479-H21
HPE 1.8TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	872481-H21
HPE 2.4TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	881457-H21

Midline - 12G SAS - SFF Drives

HPE 1TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty HDD	832514-H21
HPE 2TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765466-H21
HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834031-H21
HPE 2TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833926-H21
HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833928-H21

Midline - 12G SAS - LFF Drives

HPE 6TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861746-H21
HPE 10TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09149-H21
HPE 10TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e 6-pack FIO HDD	P09799-B21
HPE 12TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881781-H21
HPE 18TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37669-H21
HPE 18TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37678-H21

Midline - 6G SATA SFF Drives

HPE 2TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765455-H21
HPE 1TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty HDD	655710-H21

Midline - 6G SATA - LFF Drives

HPE 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861683-H21
HPE 1TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861686-H21
HPE 8TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834028-H21
HPE 6TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861742-H21
HPE 2TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861681-H21
HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09161-H21
HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e 6-pack FIO HDD	P09797-B21
HPE 12TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881787-H21

SSD Selection**Read Intensive - 12G SAS - SFF Solid State Drives**

HPE 960GB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36997-H21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36999-H21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37001-H21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37003-H21
HPE 960GB SAS 12G Read Intensive SFF SC PM6 SSD	P26285-H21
HPE 1.92TB SAS 12G Read Intensive SFF SC PM6 SSD	P26302-H21
HPE 3.84TB SAS 12G Read Intensive SFF SC PM6 SSD	P26306-H21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM6 SSD	P26310-H21
HPE 15.3TB SAS 12G Read Intensive SFF SC PM6 SSD	P26314-H21
HPE 960GB SAS 12G Read Intensive SFF SC SS540 SSD	P21139-H21
HPE 1.92TB SAS 12G Read Intensive SFF SC SS540 SSD	P21141-H21
HPE 960GB SAS 12G Read Intensive SFF SC PM6 SSD	P26285-H21

HPE 1.92TB SAS 12G Read Intensive SFF SC PM6 SSD	P26302-H21
HPE 3.84TB SAS 12G Read Intensive SFF SC PM6 SSD	P26306-H21
HPE 7.68TB SAS 12G Read Intensive SFF SC PM6 SSD	P26310-H21
HPE 15.3TB SAS 12G Read Intensive SFF SC PM6 SSD	P26314-H21
HPE 960GB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49028-H21
HPE 1.92TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49030-H21
HPE 3.84TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49034-H21
HPE 7.68TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49039-H21
HPE 15.36TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49044-H21
Read Intensive - 6G SATA - SFF - Solid State Drives	
HPE 240GB SATA 6G Read Intensive SFF SC PM883 SSD	P04556-H21
HPE 480GB SATA 6G Read Intensive SFF SC PM883 SSD	P04560-H21
HPE 960GB SATA 6G Read Intensive SFF SC PM883 SSD	P04564-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC PM883 SSD	P04566-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC PM883 SSD	P04570-H21
HPE 960GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18424-H21
HPE 240GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18420-H21
HPE 7.68TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18430-H21
HPE 480GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18422-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18426-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18428-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC S4520 SSD	P47319-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC S4520 SSD	P47321-H21
HPE 240GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47817-H21
HPE 480GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47818-H21
HPE 480GB SATA 6G Read Intensive SFF SC PM893 SSD	P47810-H21
HPE 960GB SATA 6G Read Intensive SFF SC PM893 SSD	P47811-H21
HPE 1.9TB SATA 6G Read Intensive SFF SC PM893 SSD	P47812-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC PM893 SSD	P47813-H21
Read Intensive - 6G SATA - LFF - Solid State Drives	
HPE 960GB SATA 6G Read Intensive LFF LPC PM883 SSD	P09691-H21
Read Intensive - 6G SATA - SFF Solid State Drives	
HPE 240GB SATA 6G Read Intensive SFF SC S4510 SSD	P05924-H21
HPE 480GB SATA 6G Read Intensive SFF SC S4510 SSD	P05928-H21
HPE 960GB SATA 6G Read Intensive SFF SC S4510 SSD	P05932-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC S4510 SSD	P05938-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC S4510 SSD	P05946-H21
HPE 480GB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18432-H21
HPE 960GB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18434-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18438-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18436-H21
Write Intensive - SAS 12G - SFF Solid State Drives	
HPE 400GB SAS 12G Write Intensive SFF SC PM6 SSD	P26295-H21
HPE 800GB SAS 12G Write Intensive SFF SC PM6 SSD	P26372-H21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM6 SSD	P26376-H21
HPE 400GB SAS 12G Write Intensive SFF SC PM6 SSD	P26295-H21

HPE 800GB SAS 12G Write Intensive SFF SC PM6 SSD	P26372-H21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM6 SSD	P26376-H21
Mixed Use - 12G SAS - SFF Solid State Drives	
HPE 800GB SAS 12G Mixed Use SFF SC SS540 SSD	P21131-H21
HPE 1.6TB SAS 12G Mixed Use SFF SC SS540 SSD	P21133-H21
HPE 3.2TB SAS 12G Mixed Use SFF SC SS540 SSD	P21135-H21
HPE 6.4TB SAS 12G Mixed Use SFF SC SS540 SSD	P21137-H21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37005-H21
HPE 960GB SAS 12G Mixed Use LFF LPC Value SAS Multi Vendor SSD	P37009-H21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37011-H21
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37017-H21
HPE 800GB SAS 12G Mixed Use SFF SC PM6 SSD	P26290-H21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM6 SSD	P26354-H21
HPE 3.2TB SAS 12G Mixed Use SFF SC PM6 SSD	P26358-H21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM6 SSD	P26362-H21
HPE 800GB SAS 12G Mixed Use SFF SC PM6 SSD	P26290-H21
HPE 1.6TB SAS 12G Mixed Use SFF SC PM6 SSD	P26354-H21
HPE 3.2TB SAS 12G Mixed Use SFF SC PM6 SSD	P26358-H21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM6 SSD	P26362-H21
HPE 800GB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49046-H21
HPE 1.6TB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49048-H21
HPE 3.2TB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49052-H21
HPE 6.4TB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49056-H21
Mixed Use - 6G SATA - SFF - Solid State Drives	
HPE 480GB SATA 6G Mixed Use SFF SC SM883 SSD	P09712-H21
HPE 960GB SATA 6G Mixed Use SFF SC SM883 SSD	P09716-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC SM883 SSD	P09722-H21
HPE 480GB SATA 6G Mixed Use SFF SC S4610 SSD	P05976-H21
HPE 960GB SATA 6G Mixed Use SFF SC S4610 SSD	P05980-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC S4610 SSD	P05986-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC S4610 SSD	P05994-H21
HPE 480GB SATA 6G Mixed Use SFF SC S4620 SSD	P47323-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC S4620 SSD	P47325-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC S4620 SSD	P47326-H21
HPE 480GB SATA 6G Mixed Use SFF SC PM897 SSD	P47814-H21
HPE 960GB SATA 6G Mixed Use SFF SC PM897 SSD	P47815-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC PM897 SSD	P47816-H21
Read Intensive - NVMe - SFF - Solid State Drives	
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733 SSD	P22276-H21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733 SSD	P22278-H21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733 SSD	P22280-H21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF SCN U.3 PM1733 SSD	P22282-H21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20139-H21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20141-H21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 CD6 SSD	P20143-H21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19813-H21

HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19817-H21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SCN U.3 PE8010 SSD	P19821-H21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44572-H21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44580-H21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44572-H21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44580-H21
HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47823-H21
HPE 3.84TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47824-H21
HPE 7.68TB NVMe Gen3 Mainstream Performance Read Intensive SFF SCN U.2 Multi Vendor SSD	P47825-H21
Write Intensive - NVMe - SFF - Solid State Drives	
HPE 375GB NVMe Gen3 High Performance Low Latency Write Intensive SFF SCN U.2 P4800X SSD	878014-H21
Mixed Use - NVMe - SFF - Solid State Drives	
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735 SSD	P22268-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735 SSD	P22270-H21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735 SSD	P22272-H21
HPE 12.8TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735 SSD	P22274-H21
HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 PM1735 SSD	P22329-H21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20203-H21
HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20094-H21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20096-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20098-H21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20100-H21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20203-H21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20205-H21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 CD6 SSD	P20207-H21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19829-H21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 PE8030 SSD	P19833-H21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19837-H21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44588-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44596-H21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44588-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN Self-encrypting FIPS U.3 CM6 SSD	P44596-H21
HPE 1.6TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47820-H21
HPE 3.2TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47821-H21
HPE 6.4TB NVMe Gen3 Mainstream Performance Mixed Use SFF SCN U.2 Multi Vendor SSD	P47822-H21

Notes:

– Requirements for Direct Attach SED support

- TPM is required for direct attach SED when using "Local Key Management" TPM is not required for direct attach SED Remote Key Management
- For "Remote Key Management," iLO Advanced license is required for remote key manager (for example, ESKM) support

Mixed Use - NVMe - HH - Solid State Drives

HPE 1.6TB NVMe Gen4 x8 High Performance Mixed Use AIC HHHL PM1735 SSD	P26934-H21
HPE 3.2TB NVMe Gen4 x8 High Performance Mixed Use AIC HHHL PM1735 SSD	P26936-H21

Bezel Kits

HPE Apollo 2000 SFF Bezel Enhanced Kit	874793-B21
HPE Apollo 2000 LFF Bezel Kit	838518-B21

HPE Smart Array Storage Controllers

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
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Notes: This controller supports 0 Internal SAS/SATA devices

HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
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Notes:

- This controller can support up to 0 internal SAS/SATA devices.
- This controller may be selected to support: SAS Tape Device (External), SAS Storage (External)

HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21
HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21

HBA Storage Controllers

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter	P9M75A
HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter	P9M76A
HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter	Q0L11A
HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter	Q0L12A
HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter	Q0L13A
HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter	Q0L14A
HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
HPE SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE CN1300R 10/25Gb Dual Port Converged Network Adapter	Q0F09A
HPE CN1200R 10GBASE-T Converged Network Adapter	Q0F26A
HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	R2E08A
HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A

HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter	R2J62A
HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A

PCIe Accelerators-

HPE 750GB NVMe Gen3 x4 High Performance Low Latency Write Intensive AIC HHHL P4800X SSD	878038-H21
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Additional Options

Converged Infrastructure Management

HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A

HPE Integrated Light-Out (iLO)

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21

Notes:

- For additional license options please see the QuickSpecs at:
<https://h20195.www2.hpe.com/v2/GetDocument.aspx?docname=c04154343>

- For more information, visit: <http://www.hpe.com/info/iLO>

USB Flash Kit

HPE 32GB microSD Flash Memory Card	700139-B21
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Security Hardware

Trusted Platform Module

HPE Trusted Platform Module 2.0 Gen10 Option	864279-B21
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HPE Smart Array SmartCache License

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU	D7S26A
HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU	D7S27A
HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU	D7S27AAE

USB and SD Options

HPE USB US Keyboard/Mouse Kit	631341-B21
HPE USB UK Keyboard/Mouse Kit	631344-B21
HPE USB FR Keyboard/Mouse Kit	631346-B21
HPE USB ES Keyboard/Mouse Kit	631348-B21

HPE USB DE Keyboard/Mouse Kit	631358-B21
HPE USB JP Keyboard/Mouse Kit	631360-B21
HPE USB IT Keyboard/Mouse Kit	631362-B21
HPE USB CN Keyboard/Mouse Kit	631364-B21
HPE USB AE Keyboard/Mouse Kit	638212-B21
HPE USB RU Keyboard/Mouse Kit	638214-B21
HPE USB IN Keyboard/Mouse Kit	672097-D63
HPE USB AP/INTL Keyboard/Mouse Kit	672097-373
HPE USB INTL Keyboard/Mouse Kit	672097-B33
HPE USB PT Keyboard/Mouse Kit	672097-133
HPE USB TR Keyboard/Mouse Kit	672097-143
HPE USB CZ Keyboard/Mouse Kit	672097-223
HPE USB FI Keyboard/Mouse Kit	672097-353
HPE USB SE Keyboard/Mouse Kit	672097-103
HPE USB CH Keyboard/Mouse Kit	672097-113
HPE USB KR Keyboard/Mouse Kit	672097-KD3

Notes: Please see the [QuickSpecs](http://h18000.www1.hpe.com/products/QuickSpecs/13972_div/13972_div.html) for Technical Specifications and additional information:

http://h18000.www1.hpe.com/products/QuickSpecs/13972_div/13972_div.html

HPE 36pin Serial/USB/VGA Dongle Cord Kit	676277-B21
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HPE Tape Backup

Notes: For the complete range of tape drives, autoloaders, libraries and media see:

<http://www.hpe.com/storage/storeever>.

For hardware and software compatibility of Hewlett Packard Enterprise tape backup products

<http://www.hpe.com/storage/BURCompatibility>.

HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A
HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
HPE StoreEver MSL6480 Scalable Base Module	QU625A
HPE StoreEver MSL2024 0-drive Tape Library	AK379A
HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit	N7P37A
HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit	N7P36A
HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit	C0H27A
HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit	C0H28A

Graphic Card Options

NVIDIA T4 16GB Computational Accelerator for HPE	R0W29A
NVIDIA M10 Quad GPU Module for HPE	Q0J62A
NVIDIA Quadro RTX 4000 Graphics Accelerator for HPE	R1F95A
NVIDIA Quadro RTX 8000 Graphics Accelerator for HPE	R1F97A
HPE ProLiant XL190r Gen10 CPU 8-pin Cable Kit for NVIDIA GPU	874857-B21
HPE ProLiant XL190r Gen10 PCIe 8-pin Cable Kit for NVIDIA GPU	874859-B21
HPE ProLiant XL190r Gen10 8-pin Cable Kit for NVIDIA Quadro RTX 4000 GPU	P19872-B21
HPE ProLiant XL190r Gen10 8-pin Cable Kit for NVIDIA Tesla T4 GPU	P19869-B21

Notes:

- The following table summarizes the configuration options for risers associated with the GPU cards.
- When selecting R1F95A & 4xGPU riser (P19233-B21) then P19872-B21 selection is required
- When selecting R0W29A & 4xGPU riser (P19233-B21) then P19869-B21 selection is required

	HPE NVIDIA Tesla T4 PCIe 16GB Module (R0W29A)	HPE NVIDIA Quadro RTX4000 GPU Module (R1F95A)	NVIDIA Tesla M10 Quad GPU Module (Q0J62A)	HPE NVIDIA Quadro RTX8000 GPU Module (R1F97A)	HPE NVIDIA Tesla P40 24GB Module (Q0V80A)	HPE NVIDIA Tesla V100 PCIe 32GB Module (0 (Q9U36A) HPE NVIDIA Tesla V100s 32GB Module (R4D73A)	HPE NVIDIA Quadro P4000 GPU Module (Q0V78A)	HPE NVIDIA Tesla P100 PCIe 16GB Module (Q0E21A)
HPE XL190r Gen10 FlexibleLOM Riser Kit (874847- B21)	X	X	X	X	X	X	X	X
HPE XL190r Gen10 16NVMe FlexibleLOM Riser Kit (874849- B21)	X	X	X	X	X	X	X	X
HPE XL190r Gen10 P2 Riser Kit (874851- B21)	X	X	X	X	X	X	X	X
HPE XL190r Gen10 PCIe 6-pin to 8- pin Adapter Kit (P00145- B21)				X			X	
HPE XL190r Gen10 NVIDIA CPU 8-pin Adapter Kit (874857- B21)					X	X		X
HPE XL190r Gen10				X				

NVIDIA PCIe 8-pin Adapter Kit (874859- B21)			
HPE XL190r Gen10 Right 4x GPU Riser Kit	X ¹	X ²	

Notes:

- ¹ Requires selection of HPE XL190r Gen10 Tesla T4 8pin Adptr Kit (P19869-B21)

- ² Requires selection of HPE XL190r Gen10 RTX4000 8pin Adptr Kit (P19872-B21)

Memory

HPE Memory

General Memory population rules and guidelines:

Notes: For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration Tool:

<http://www.hpe.com/docs/memory-population-rules>

Memory speed

For details on the HPE Server Memory speed, visit: <https://www.hpe.com/docs/memory-speed-table>

Technical Specifications

System Unit Specifications	
Server Dimensions (L x W x D)	
3.32 x 7.27 x 27.36 in (8.43 x 18.45 x 69.47 cm)	
Weight (approximate)	
Maximum	25.1 lb (11.39 kg)
System Inlet Temperature Standard Operating Support	
10° to 35°C (50° to 95°F)	At sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.
Extended Ambient Operating Support	
5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F)	System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F). For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating

	of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
-30° to 60°C (-22° to 140°F).	Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	
Operating	
8% to 90%	Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
Non-operating	
5 to 95%	Relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	
Operating	
3050 m (10,000 ft).	This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Non-operating	
9144 m (30,000 ft)	Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

Listed are the declared A-Weighted sound power levels (**LWAd**) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Notes: Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.
r2200 Chassis.

r2200 Chassis			
Configuration SKU	Entry	Base	Performance
Idle			
LWAd	6.5 B	7.3 B	8.4 B
LpAm	51 dBA	59 dBA	69 dBA
Operating			
LWAd	6.5 B	7.6 B	8.8 B
LpAm	51 dBA	62 dBA	73 dBA

r2600 Chassis			
Configuration SKU	Entry	Base	Performance
Idle			
LWAd	6.6 B	7.5 B	8.1 B
LpAm	51 dBA	64 dBA	66 dBA
Operating			
LWAd	7.1 B	7.8 B	8.7 B
LpAm	57 dBA	63 dBA	70 dBA

r2800 Chassis			
Configuration SKU	Entry	Base	Performance
Idle			
LWAd	6.6 B	7.5 B	8.1 B
LpAm	51 dBA	64 dBA	66 dBA
Operating			

LWAd	8.6 B	8.7 B	8.9 B
LpAm	69 dBA	70 dBA	71 dBA

Notes: Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.

Thermal limitations

For a full list of thermal limitations please see the HPE ProLiant XL190r Gen 10 Server User Guide.

https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00027947en_us&docLocale=en_US

Summary of Changes

Date	Version History	Action	Description of Change
06-Dec-2021	Version 25	Changed	Core options section was updated. Obsolete SKUs were removed
01-Nov-2021	Version 24	Changed	Core options section was updated. Obsolete SKUs were removed
07-Sep-2021	Version 23	Changed	Core options section was updated. Obsolete SKUs were removed
02-Aug-2021	Version 22	Changed	Core options and Service and Support sections were updated. Obsolete SKUs were removed
01-Feb-2021	Version 21	Changed	Core options section was updated. Obsolete SKUs were removed
07-Dec-2020	Version 20	Changed	Core options section was updated. Obsolete SKUs were removed
05-Oct-2020	Version 19	Changed	Core options section was updated. Obsolete SKUs were removed
03-Aug-2020	Version 18	Changed	Additional Options and Core options sections were updated. Obsolete SKUs were removed
01-Jun-2020	Version 17	Changed	SKUs were updated in Core options section Obsolete SKUs were removed
06-Apr-2020	Version 16	Changed	Standard Features, Core Options and Additional options sections were updated. Obsolete SKUs were removed.
24-Feb-2020	Version 15	Changed	Standard Features, Core Options and Additional options sections were updated. Obsolete SKUs were removed.
02-Dec-2019	Version 14	Changed	Overview, Standard Features and Additional Options sections were updated. SKUs were updated in Core options Obsolete SKUs were removed
07-Oct-2019	Version 13	Changed	Overview, Standard Fetures, Core Options and Additional Options sections were updated. Obsolete SKU was removed from Additional Options section.
05-Aug-2019	Version 12	Changed	Overview, Standard Features and Core Options Sections were updated Obsolete SKUs were removed.
03-Jun-2019	Version 11	Changed	Standard Features, Configuration Information, Core Options sections were updated. Obsolete SKUs were removed. The U.S. version of QuickSpecs is no longer being updated, please reference the Worldwide QuickSpecs for

			latest information.
06-May-2019	Version 10	Changed	Obsolete SKUs were removed. SKUs were updated Core Options section was updated.
18-Apr-2019	Version 9	Changed	Obsolete SKUs were removed. SKUs were updated.
02-Apr-2019	Version 8	Changed	Configuration Information and Core Options sections were updated. Obsolete SKUs were deleted
04-Feb-2019	Version 7	Changed	SKUs were added and Obsolete SKUs were removed from Core Options section. SKUs were added in Configuration Information section.
03-Dec-2018	Version 6	Changed	Configuration Information and Core Options sections were updated. Obsolete SKUs were removed
01-Oct-2018	Version 5	Changed	QuickSpecs updated with the current Recommended-Extended Options, Configuration Information, Standard Features , Core Options, Additional Options and SKUs descriptions were updated, Obsolete SKUs were deleted

Date	Version History	Action	Description of Change
13-Aug-2018	Version 4	Changed	Configuration information and SKUs descriptions were updated, incorporated Recommended and Extended Options.
02-Apr-2018	Version 3	Changed	Update the configuration information section
09-Oct-2017	Version 2	Changed	Update SKUs in the configuration information section
25-Sep-2017	Version 1	New	New QuickSpecs

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