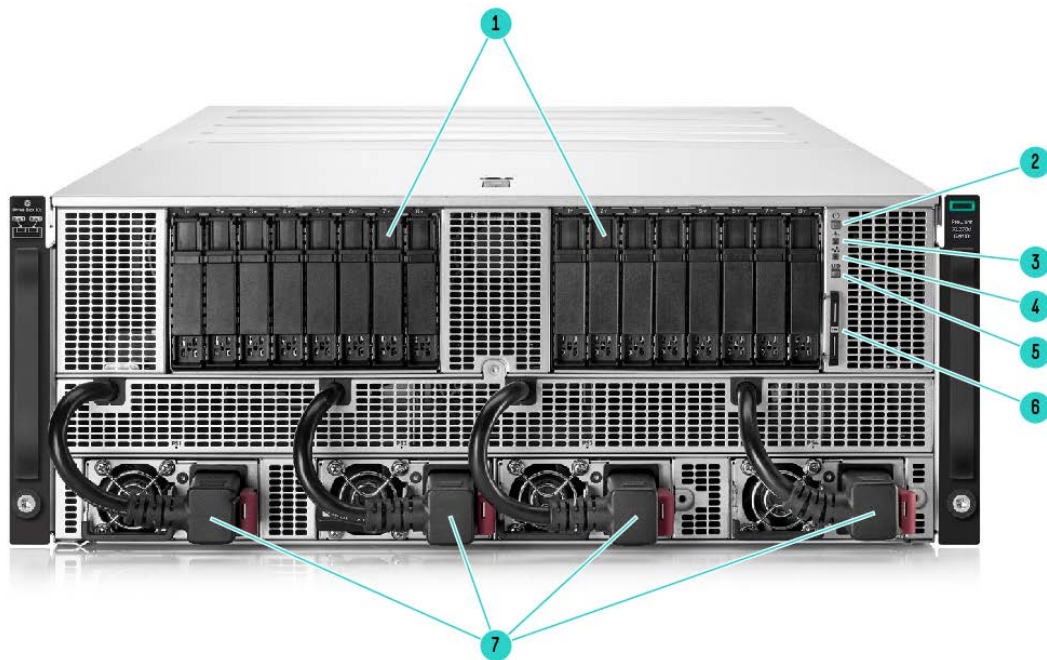


Overview

HPE Apollo 6500 Gen10 System

The ability of computers to autonomously learn, predict, and adapt using massive datasets is driving innovation and competitive advantage across many industries and applications. The HPE Apollo 6500 Gen10 System is an ideal HPC and Deep Learning platform providing unprecedented performance with industry leading GPUs, fast GPU interconnect, high bandwidth fabric and a configurable GPU topology to match your workloads. The system with rock-solid RAS features (reliable, available, secure) includes up to eight high power GPUs per server tray (node), NVLink for fast GPU-to-GPU communication, Intel® Xeon® Scalable Processors support, choice of up to four high-speed / low latency fabric adapters, and the ability to optimize your configurations to match your workload and choice of GPU. And while the HPE Apollo 6500 Gen10 System is ideal for deep learning workloads, the system is suitable for complex high performance computing workloads such as simulation and modeling.

Eight GPU per server for faster and more economical deep learning system training compared to more servers with fewer GPU each. Keep your researchers productive as they iterate on a model more rapidly for a better solution, in less time. Now available with NVLink to connect GPUs at up to 300 GB/s for the world's most powerful computing servers. HPC and AI models that would consume days or weeks can now be trained in a few hours or minutes.

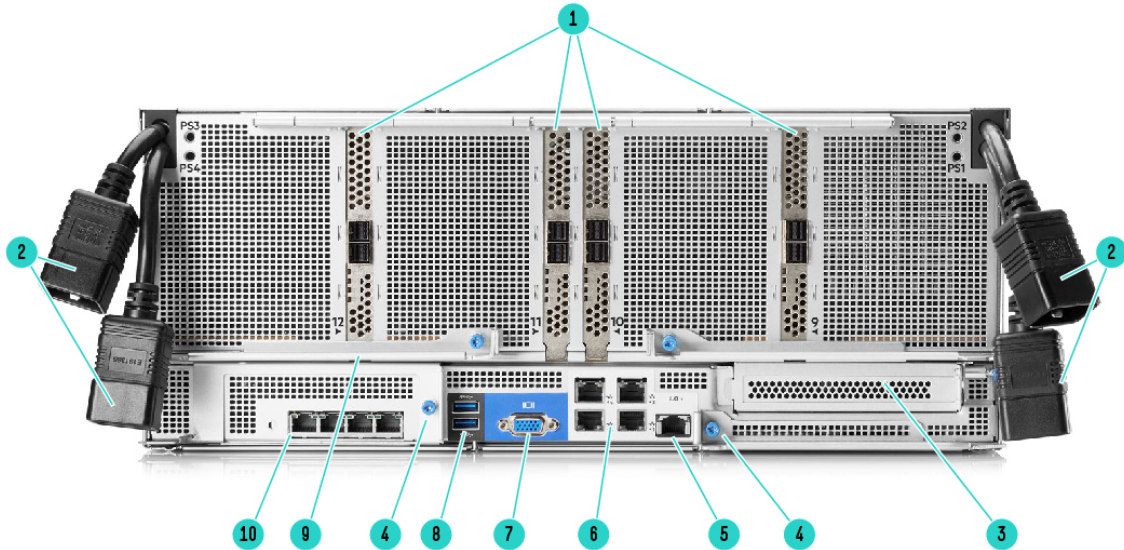


HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe drive cages shown- Front View –with two

- | | |
|--------------------------------------------------------|------------------------------------------------------------|
| 1. Drive Bay (2 optional 6SFF+2NVMe cages shown) | 5. UID button Drive |
| 2. Power On/Standby button and system power LED button | 6. Serial label pull tag |
| 3. Health LED | 7. 4 HPE 2200W Platinum Hot Plug Power Supply (2 standard) |
| 4. NIC status | |

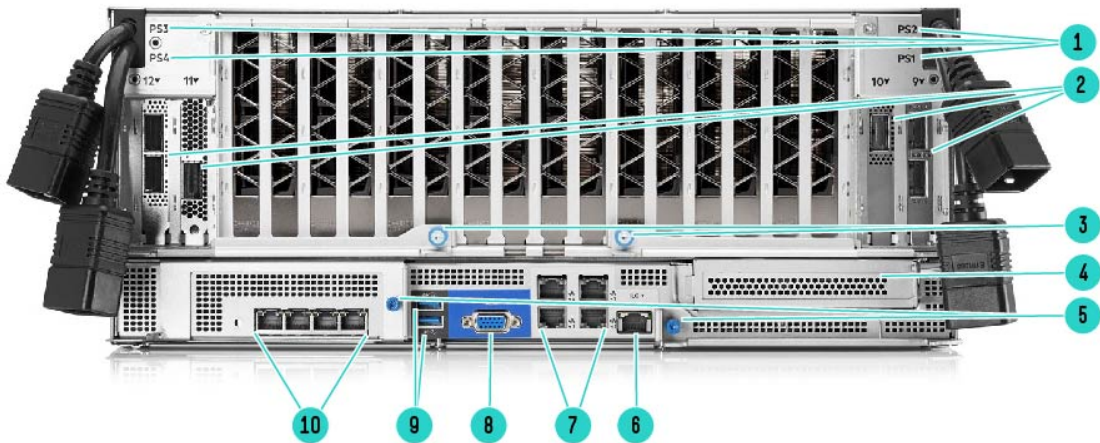
NOTE: Click to see a [3D demo](#)

Overview



HPE XL270d Gen10 8 SXM2 GPU Module- Rear View

- | | |
|--------------------------------------------------------------------------|--------------------------------------------------|
| 1. Four Full Height Half Length PCIe Gen3 (shown with optional adapters) | 6. Embedded 4 x 1GbE Network Adapter |
| 2. Pass through power cords | 7. VGA connector |
| 3. Full Height Half Length PCIe Gen3 | 8. USB connectors 3.0 (2) |
| 4. System board module latches | 9. GPU Module latches |
| 5. Dedicated iLO management port | 10. Optional FlexibleLOM ports (Shown: 4 x 1GbE) |

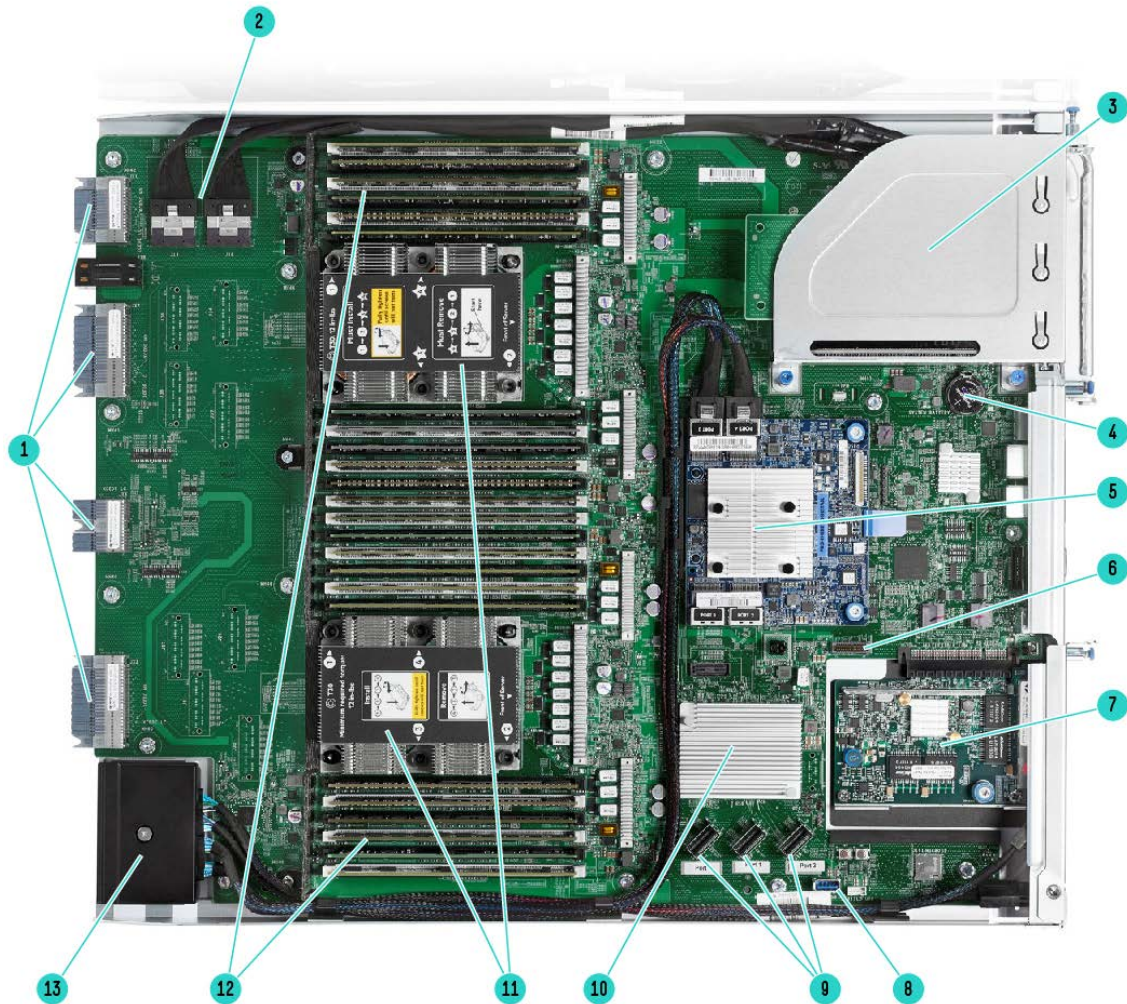


HPE XL270d Gen10 8 PCIe GPU Module v.2- Rear View

NOTE: The HPE XL270d Gen10 8 PCIe GPU Module v.2 adds extended support for accelerators with rear I/O such as the NVIDIA Quadro RTX GPU for advanced rendering and deep learning training.

- | | |
|--------------------------------------------------------------|--------------------------------------------------|
| 1. Pass through power cords | 6. Dedicated iLO management port |
| 2. Four Low Profile PCIe Gen3 (shown with optional adapters) | 7. Embedded 4 x 1GbE Network Adapter |
| 3. GPU Module latches | 8. VGA connector |
| 4. Full Height Half Length PCIe Gen3 | 9. USB connectors 3.0 (2) |
| 5. System board module latches | 10. Optional FlexibleLOM ports (Shown: 4 x 1GbE) |

Overview



System Board Module view – with optional 2nd CPU, FlexLOM, Smart Array¹ shown

- | | |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1. Midplane connections | 8. Internal USB 3.0 |
| 2. NVME drive ports | 9. X4 SATA ports (1, 2 and 3) |
| 3. Full Height Half Length PCIe Gen3 x16 (shown with Optional NVME card) | 10. Platform Controller Hub |
| 4. System Battery | 11. Processors |
| 5. Optional type-a modular Smart Array controller ¹ | 12. DDR4 DIMM slots. Shown fully populated in 24 slots (12 per processor) |
| 6. m.2 riser connector | 13. Storage connector |
| 7. Optional FlexibleLOM adapter | |

Overview

What's New:

- HPE XL270d Gen10 8 PCIe GPU Module v.2 adds extended support for accelerators with rear I/O such as the NVIDIA Quadro RTX GPU for advanced rendering and deep learning training
 - New second generation Intel Xeon Scalable Processors in 2020
 - Adding support for up to eight HPE NVIDIA Quadro RTX6000, RTX8000 and up to 12 HPE NVIDIA Tesla T4 GPU Modules
 - Extensive support for a wide variety of Fiber Channel Adapters +
 - Four topologies to choose from in NVLink from 4 to 8 GPU
 - Up to 205W processors for higher frequency options or larger core count
 - Support for NVLink with the latest NVIDIA GPU
 - Choose PCIe GPU topologies of 4:1 or 8:1 topology in BIOS (PCIe GPU Module only)
 - Up to 4 high speed fabric adapters
 - Traditional rack mount server design fits in standard racks
 - Broad storage options, with up to 16 front-accessible storage devices—SAS or SATA solid-state drives (SSDs)—with up to 4 NVMe drives
 - New NVIDIA Graphics card options
 - Tested with the NVIDIA GPU Cloud containers, which were successfully installed on the server
 - Support for HPE FlexibleLOM and HPE Modular Smart Arrays
-

Platform Information

Form Factor

4U rack

Chassis Types

- HPE ProLiant XL270d Gen10 Configure to order Server
- Standard features:
- 2 HPE 2200W Platinum Hot Plug Power Supply
- HPE XL270d Gen10 Rail Kit

NOTE: Comes with the AHCI for embedded SATA support of up to 12 SATA drives. The embedded SATA supports a total of 14 SATA ports, but only 12 ports are accessible as 2 are leveraged to support the M.2 options. Please see Array controller section for full details.

System Fans

Standard – Five hot plug fan modules per server. Each module includes one 80mm dual rotor fan on top, one 60mm single rotor fan on bottom.

NOTE: hot plug fan functionality requires the use of the Cable Management feature of the rail kit, which will require the use of 1200mm deep racks.

Standard Features

Processors – Up to 2 of the following depending on model.

NOTE: For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

NOTE: This table covers the public Intel offering only.

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
1st Generation Intel® Xeon® Scalable Processor Family Platinum Processors							
Platinum 8176 Processor	2.1 GHz	28	38.50 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Platinum 8160 Processor	2.1 GHz	24	33.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
2nd Generation Intel® Xeon® Scalable Processor Family Platinum Processors							
Platinum 8276 Processor	2.2 GHz	28	38.50 MB	165W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8270 Processor	2.6 GHz	26	35.75 MB	205W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8268 Processor	2.9 GHz	24	35.75 MB	205W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8260 Processor	2.4 GHz	24	35.75 MB	165W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8260M Processor	2.4 GHz	24	35.75 MB	165W	3 @ 10.4 GT/s	2933 MT/s	2TB

NOTE: Platinum Processors:

2nd Generation:

- 6-Channel DDR4 @ 2933 MT/s.
- 6TB max RAM (larger than 2TB memory per socket on select SKUs)
- Support for: Vector Neural Network Instructions (VNNI) for inference acceleration.
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, advanced RAS

1st Generation:

- 6-Channel 1DPC DDR4 @ 2666 MT/s.
- 768 GB max memory capacity (1.5 TB on select skus)
- 2 and 4 socket capable, 2S - 2UPI, 4S - 3UPI, 8S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, advanced RAS.

Standard Features

1st Generation Intel® Xeon® Scalable Processor Family Gold Processors							
Gold 5120 Processor	2.2 GHz	14	19.25 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
Gold 6154 Processor	3.0 GHz	18	24.75 MB	200W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6152 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6150 Processor	2.7 GHz	18	24.75 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6148 Processor	2.4 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6146 Processor	3.2GHz	12	24.75 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6144 Processor	3.5GHz	8	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6142M Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Gold 6142 Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6140M Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	1.5TB
Gold 6140 Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6136 Processor	3.0 GHz	12	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6134 Processor	3.2 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6130 Processor	2.1GHz	16	22.00 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 6126 Processor	2.6 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768GB
Gold 5120 Processor	2.2 GHz	14	19.25 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768GB
2nd Generation Intel® Xeon® Scalable Processor Family Gold Processors							
Gold 6258R Processor	2.7 GHz	28	38.5 MB	205 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6254 Processor	3.1 GHz	18	24.75 MB	200W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6254 Processor	3.1 GHz	18	24.75 MB	200W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6252 Processor	2.1 GHz	24	35.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6248R Processor	3.00 GHz	24	35.75 MB	205 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6248 Processor	2.5 GHz	20	27.5 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6246R Processor	3.40 GHz	16	35.75 MB	205 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6244 Processor	3.6 GHz	8	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6242R Processor	3.10 GHz	20	35.75 MB	205 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6242 Processor	2.8 GHz	16	22 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6240Y Processor	2.6 GHz	18/14/8	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6240R Processor	2.40 GHz	24	35.75 MB	165 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6240 Processor	2.6 GHz	18	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6238R Processor	2.20 GHz	28	38.5 MB	165 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6230R Processor	2.10 GHz	26	35.75 MB	150 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6230 Processor	2.1 GHz	20	27.5 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6226R Processor	2.90 GHz	16	22 MB	150 W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 5220R Processor	2.20 GHz	24	35.75 MB	150 W	2 @ 10.4 GT/s	2666 MT/s	1TB
Gold 5220 Processor	2.2 GHz	18	24.75 MB	125W	2 @ 10.4 GT/s	2666 MT/s	1TB
Gold 5218R Processor	2.10 GHz	20	27.5 MB	125 W	2 @ 10.4 GT/s	2666 MT/s	1TB
Select 2nd Generation Intel® Xeon® Scalable Processor Family Silver Processors: use your HPE configurations tool to determine availability							

Standard Features

NOTE: Gold Processors:

2nd Generation:

- 6-Channel DDR4 @ 2933 MT/s (Gold 6200 & 5222 skus only), 2666 MT/s on all Gold 5200 skus (except 5220, 5220R, 5218R @ 2933 MT/s).
- 6TB max RAM (larger than 2TB memory per socket on select SKUs)
- Support for: Intel® Vector Neural Network Instructions (VNNI) for inference acceleration.
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, advanced RAS

1st Generation:

- 6-Channel 1DPC DDR4 @ 2400 MT/s (SKU 5122 - supports 2666 MT/s).
- 768 GB max memory capacity (1.5 TB on select skus).
- 2 and 4 socket capable, 2S - 2UPI, 4S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512 (1x 512-bit FMA) (SKU 5122 - supports 2x512 bit FMA).
- 48 lanes PCIe 3.0, advanced RAS.

Chipset

Intel C621 Chipset

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

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

On System Management Chipset

HPE iLO 5 ASIC

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

Memory

One of the following depending on model

Type: HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)

DIMM Slots Available 24 12 DIMM slots per processor, 6 channels per processor, 2 DIMMs per channel

Maximum capacity (LRDIMM) 3.0 TB 24 x 128 GB LRDIMM @ 2666 MHz or 2933 MHz

Maximum capacity (RDIMM) 1.5 TB 24 x 64 GB RDIMM @ 2933 MHz

NOTE: Maximum memory per socket is dependent on processor selection. Processors supporting 1.5 TB per CPU are indicated by the “M” in the processor model names (i.e. 6140M).

NOTE: Mixing of RDIMM and LRDIMM memory is not supported.

NOTE: HPE DDR4-2933 Smart Memory Kits will only be supported with Second Generation Intel Xeon Scalable Processors.

NOTE: For General Server Memory Population Rules and Guidelines for Gen10 see details here:

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

Memory Protection

For details on the HPE Server Memory Options RAS feature, visit: <http://www.hpe.com/docs/memory-ras-feature>.

Standard Features

Expansion Slots- System board

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
21	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

Expansion Slots- SXM-2 GPU Module

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
11	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 1
12	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 1
9	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2
10	PCIe 3.0	X16	X16	Full-height, half-length slot	Proc 2

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

Expansion Slots- PCIe GPU Module

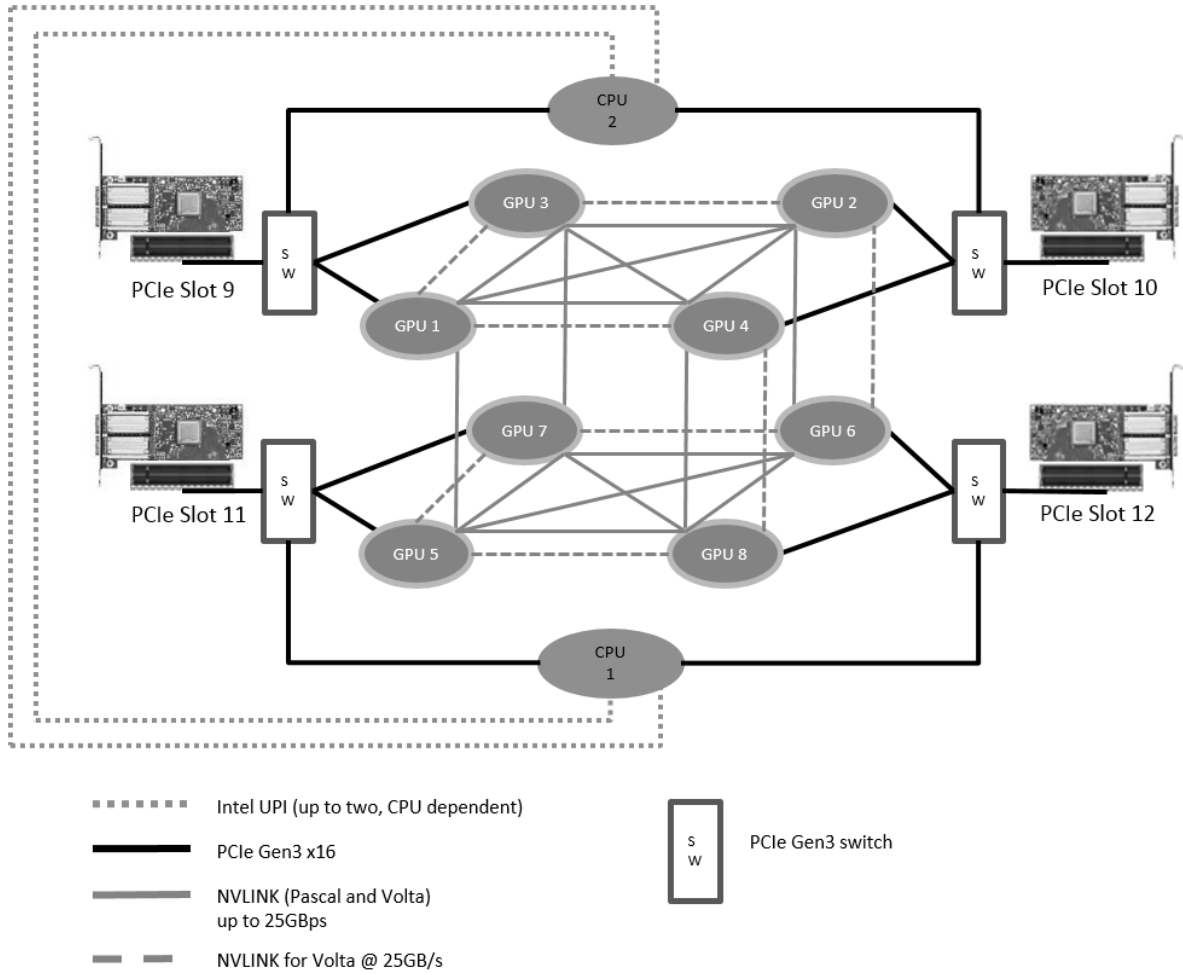
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor	Notes
11	PCIe 3.0	X16	X16	Low Profile slot	Dependent on topology selected in BIOS. See User and Administrator Guide for full details
12	PCIe 3.0	X16	X16	Low Profile slot	
9	PCIe 3.0	X16	X16	Low Profile slot	
10	PCIe 3.0	X16	X16	Low Profile slot	

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

NVLink GPU Topologies – 8 GPU Installed

This is the only available topology for 8 NVLink GPU.

Standard Features



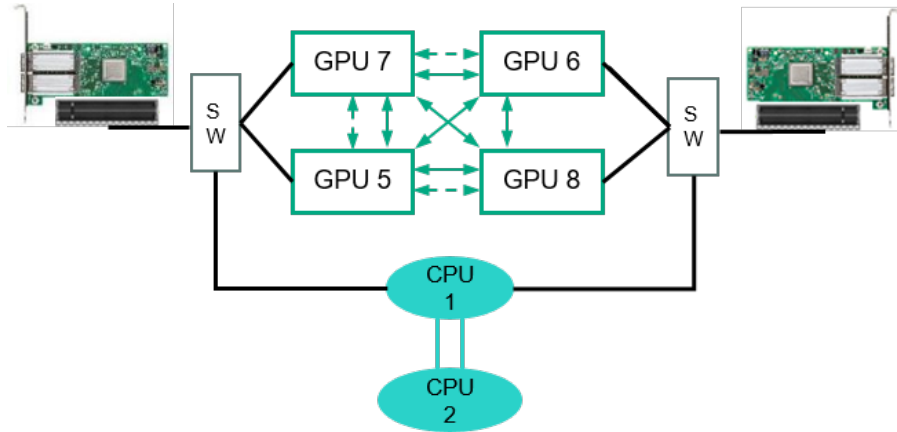
NVLINK Hybrid Cube Mesh Diagram

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

Standard Features

NVLink GPU Topologies – 4 GPU Installed

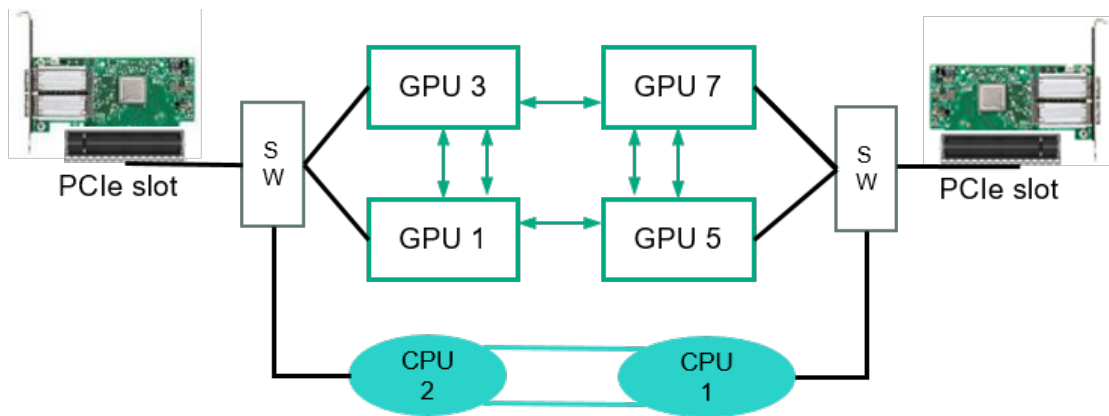
Three alternative topologies are offered for use when the customers wish to use only 4 NVLink GPU. Due to the



HPE 4 GPU NVLink Topology A FIO Kit (P12231-B21)

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

NOTE: Topology A will be enabled by default for 4 GPU orders. This enables a fully connected 4 GPU configuration providing NVLink between any two GPU in the configuration, as well as robust fabric bandwidth.

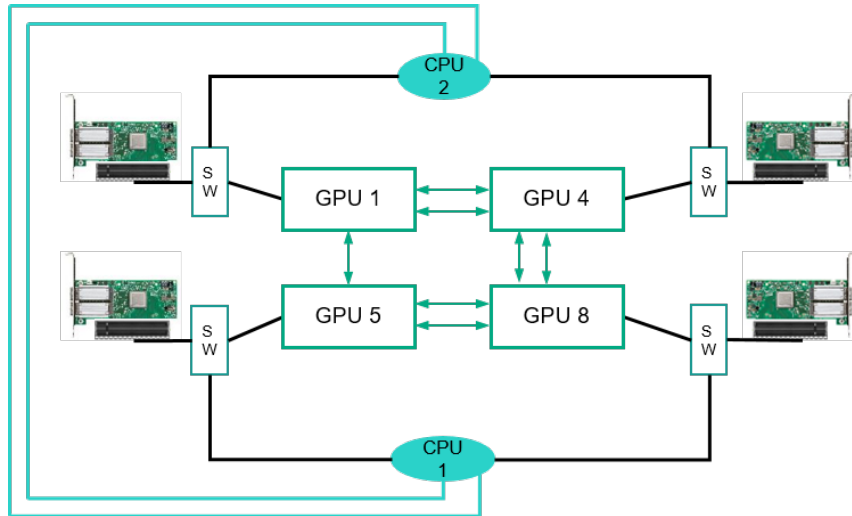


HPE 4 GPU NVLink Topology B FIO Kit (P12237-B21)

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

NOTE: Topology B GPU are no longer “fully connected,” however it increases system CPU and main memory bandwidth for HPC codes where there is little GPU:GPU communication.

Standard Features

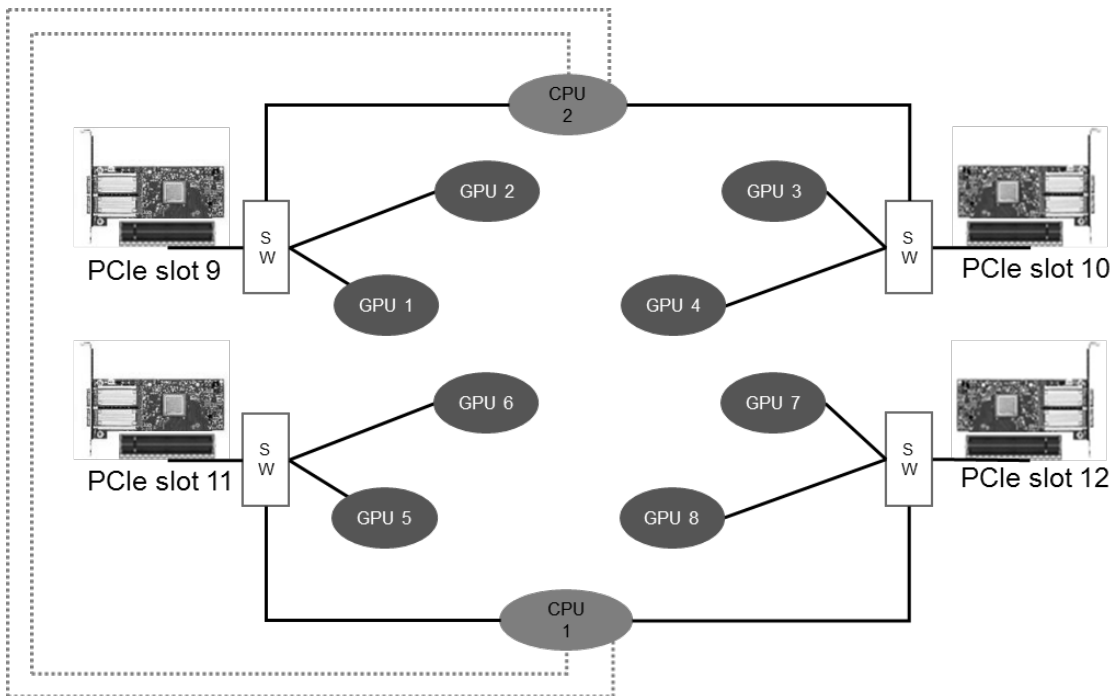


HPE 4 GPU NVLink Topology C FIO Kit (P12232-B21)

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

NOTE: Topology C enables each GPU with as much as a full x16 PCIe link back to the CPU, and can pair up each GPU with a fabric adapter for a 1:1 ratio of GPU to Fabric. For codes that emphasize CPU:GPU or Fabric:GPU rather than GPU:GPU communications, this is our highest bandwidth configuration in a 4 NVLink GPU server.

PCIe GPU Topologies

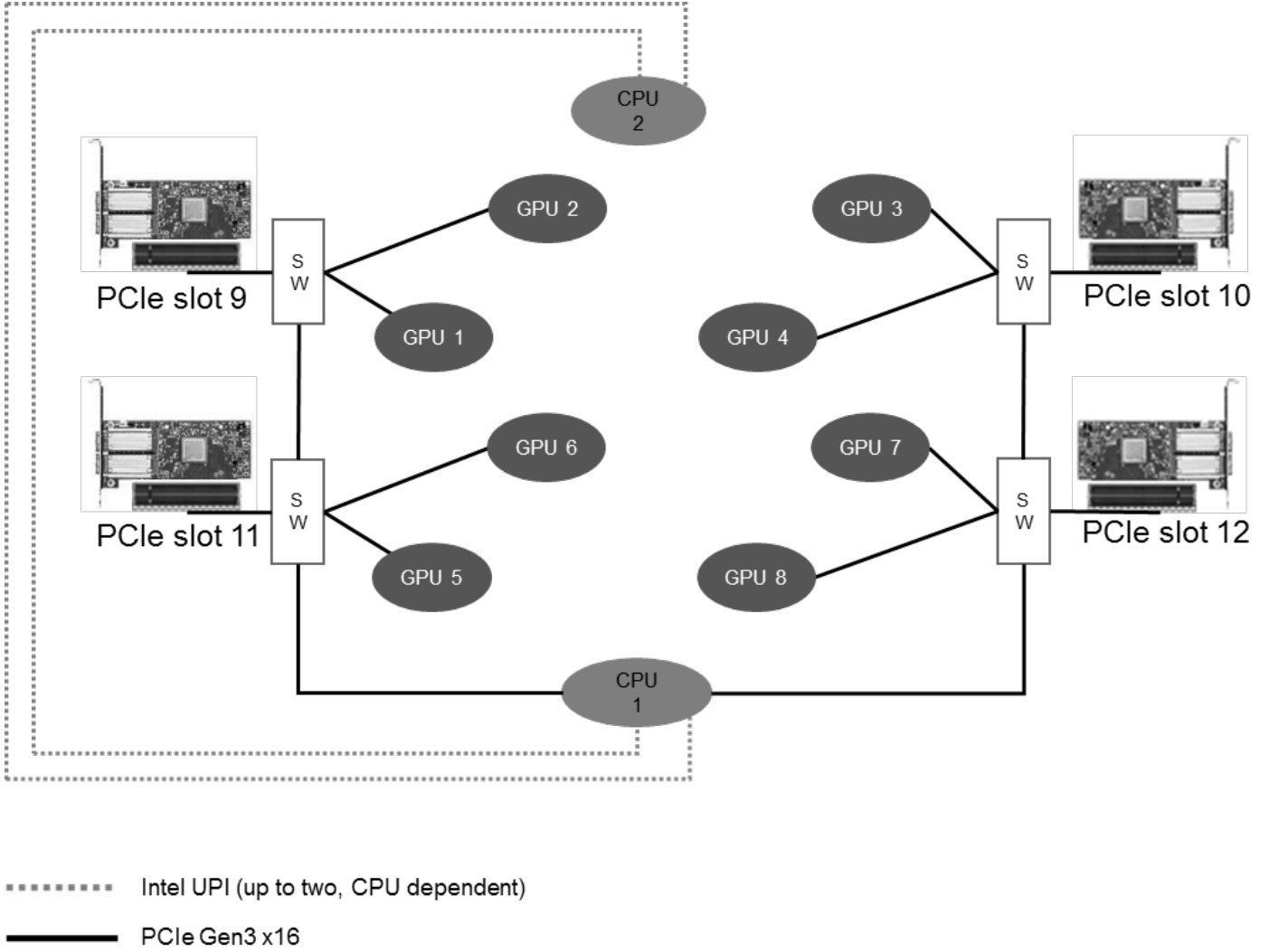


- Intel UPI (up to two, CPU dependent)
- PCIe Gen3 x16

PCIe 4:1 (up to 4 GPU per CPU PCIe root complex) Diagram

Standard Features

GPU Topologies



PCIe 8:1 (up to 8 GPU per CPU PCIe root complex) Diagram

Standard Features

Storage Controllers

The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the [HPE Smart Array Gen10 Controllers Data Sheet](#). For optimum performance in the Apollo 6500 Gen10 System we highly recommend use of a performance RAID Controller.

Software RAID

HPE Smart Array S100i SR Gen10 SW RAID

NOTE: HPE Smart Array S100i SR Gen10 SW RAID will operate in UEFI mode only. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22.

NOTE: HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled.

NOTE: The S100i uses 14 embedded SATA ports, but only 12 ports are accessible as 2 are leveraged to support the 2 M.2 options on the primary riser.

NOTE: The S100i supports windows only

NOTE: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: <https://downloads.linux.hpe.com/SDR/project/lsrrb/>

Embedded SATA

Embedded AHCI controller for SATA or m.2

NOTE: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: <https://downloads.linux.hpe.com/SDR/project/lsrrb/>

Performance RAID Controller

A performance array is recommended for the Apollo 6500 Gen10

- HPE Smart Array P408i-a SR Gen10 Controller
- HPE Smart Array P408i-p SR Gen10 Controller
- HPE Smart Array P408e-p SR Gen10 Controller
- HPE Smart Array P816i-a SR Gen10 Controller

NOTE: Performance RAID Controllers require the HPE Smart Storage Battery (P01367-B21) which is sold separately.

HPE Storage Options

Emulex Fibre Channel HBAs

- HPE StoreFabric SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

QLogic Fibre Channel HBAs

- HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter

NOTE: For the complete listing of Fibre Channel Converged Network Adapters please see:

<https://www.hpe.com/us/en/product-catalog/servers/adapters/pip.models.hpe-storefabric-converged-networkadapters.4118472.html>

Standard Features

Internal Storage Devices

Hard Drives

None ship standard, up to 16 max using two HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe drive cages

M.2

None ship standard

Maximum Internal Storage

	Capacity	Configuration
Hot Plug SFF SAS SSD	244 TB	16 x 15.3 TB
Hot Plug SFF SATA SSD	122 TB	16 x 7.68 TB
Hot Plug SFF NVMe SSD	30.7 TB NVMe	4 x 7.68 TB NVMe

NOTE: 2x m.2 drives are supported

Power Supply

HPE 2200W Platinum Hot Plug Power Supply Kit

NOTE: 80plus Platinum efficiency

Interfaces

VGA	1
Network Ports	4 x 1 Gb ports shipping standard with optional FlexibleLOM or stand up card
HPE iLO Remote Management Network Port	1 Gb Dedicated
USB 3.0	2 rear, 1 internal

Operating Systems and Virtualization Software Support for ProLiant Servers

- **Red Hat Enterprise Linux (RHEL)** (64 bit) 7, 8
- **SUSE Linux Enterprise Server (SLES)** (64bit) 11, 12, 15
- **Canonical Ubuntu** 16.04.3 - HWE kernel 4.10, LTS 18.04
- **Windows Server 2016** (Most recent version)

NOTE: For details and more information and the latest Operating Systems and Virtualization Software support details please visit <http://www.hpe.com/support/Servers-Certification-Matrices>

Standard Features

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- PXE Support
- VGA
- USB 3.0 Compliant (external / internal)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API
- IPMI 2.0
- Secure Digital 2.0
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3

NOTE: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: <http://www.hpe.com/servers/ashrae>

UEFI (Unified Extensible Firmware Interface Forum)

UEFI is the default for the Apollo 6500 Gen10. Legacy mode can be selected in the field or as a CTO option (758959-B22).

Graphics

Integrated Video Standard

- Video modes up to 1920 x 1200@60Hz (32 bpp)
 - 16MB Video Memory
 - HPE iLO 5 on system management memory
 - 32 MB Flash
 - 4 Gbit DDR 3 with ECC protection
-

Standard Features

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.

NOTE: 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
- 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

NOTE: For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.

NOTE: UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen10 Server. A Performance RAID controller will be required for Legacy mode.

UEFI

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

Standard Features

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 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

System Management

HPE iLO 5 Advanced

Embedded, in-depth server-level monitoring and management technology offering system management, service alerting, reporting and remote management as well as enhanced security and power management features for HPE Apollo 6500 systems.

For clustered HPE Apollo 6500 system deployments (for HPC or other emerging workloads such as AI), customers can use the following cluster management software solutions:

HPE Performance Cluster Manager

Fully integrated system management solution offering all the functionalities you need to manage your HPE Linux®-based high performance computing (HPC) clusters, all day everyday.

HPE Performance Cluster Manager aggregates system metrics + remote management from iLO.

The software provides:

- System setup
- Hardware monitoring and management including GPU management
- Image management and software updates
- Power management
- Integration with ISV & open source software solutions

Alternatively, to manage heterogeneous clusters or for customers with additional requirements, HPE also offers:

Standard Features

Bright Cluster Manager

Software from Bright Computing automates the process of building and managing Linux clusters in the data center and in the cloud offering Hardware monitoring and management including GPU management system monitoring and management, provisioning, GPU management, cloud bursting and more.

HPE also offers Bright Cluster Manager for Science Data add-on – rapid bare-metal installation of Linux OS of choice and validated DL frameworks on GPU-enabled HPE systems.

HPE BlueData EPIC

GPU-as-a-Service solution from HPE which consolidates GPUs from multiple servers (including HPE Apollo 6500) and makes them available for multiple applications providing the data science teams with the ability to create instant self-service environments for distributed AI, machine learning (ML), and big data analytics.

Security

- UEFI Secure Boot and Secure Start support
 - Immutable Silicon Root of Trust
 - FIPS 140-2 validation (iLO 5 certification in progress)
 - Common Criteria certification (iLO 5 certification in progress)
 - Configurable for PCI DSS compliance
 - Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
 - Support for Commercial National Security Algorithms (CNSA)
 - Tamper-free updates – components digitally signed and verified
 - Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
 - Ability to rollback firmware
 - TPM (Trusted Platform Module) 2.0 Option
 - Secure erase of NAND/User data
-

Warranty

This product is covered by a global limited warranty and supported by HPE Pointnext and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. 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; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite 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://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>

Optional Features

Accelerator and GPGPU Information

Hewlett Packard Enterprise supports various accelerators on select HPE ProLiant servers to support different workloads. The accelerators enable seamless integration of GPU computing with HPE ProLiant servers for high-performance computing, large data center graphics, deep learning and virtual desktop deployments. These accelerators deliver all of the standard benefits of GPU computing while enabling maximum reliability and tight integration with system monitoring and management tools such as HPE Insight Cluster Management Utility.

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go – and business grow. We've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we've created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management and system access.

HPE G2 Advanced and Enterprise Racks are perfect for the server room or today's modern data center with enhanced airflow and thermal management, flexible cable management, and a 10 year Warranty to support higher density computing.

HPE G2 PDUs offer reliable power in flexible form factors that operate at temperatures up to 60°C, include color-coded outlets and load segments and a low-profile design for optimal access to the rack and support for dense rack environments.

HPE Uninterruptible Power Systems are cost-effective power protection for any type workload. Some UPSs include options for remote management and extended runtime modules so your critical dense data center is covered in power outages.

HPE KVM Solutions include a console and switches designed to work with your server and IT equipment reliably. We've got a cost-effective KVM switch for your first rack and multiple connection IP switches with remote management and security capabilities to keep your data center rack up and running.

Learn more about HPE Racks, KVM, PDUs and UPSs at [**HPE Rack and Power Infrastructure**](#).

Service and Support

HPE Pointnext - Service and Support

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. If Artificial Intelligence is part of your digital transformation, HPE advisory and professional services for Artificial Intelligence include the workshop, proof-of-value services based on industry/ machine learning use cases, and full implementation services you will need to utilize AI. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time and improve diagnostic accuracy with a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support. Learn more about getting connected at <http://www.hpe.com/services/getconnected>

Support Services available for Apollo 6500

HPE Proactive Care Advanced

This is the recommended support for Mission Critical and SAP HANA environments. It builds on HPE Proactive Care, providing additional benefits such as the assignment of a dedicated, local account support manager (ASM) for collaboration and best practices and critical event management that provides 24x7 response and IT service restoration with incident follow-up to prevent a repeat. All of this is designed to give you an incredibly personalized, high-touch support experience that keeps your system fully available and running at peak performance.

HPE Proactive Care

HPE Proactive Care begins with providing all of the benefits of proactive monitoring and reporting to put in place the fundamentals needed for stability and availability of the IT environment. Proactive Care helps in problem prevention, with predictive analytics, personalized analysis with recommendations and advice paired with rapid access to technical experts to help rapidly resolve any problem. You receive an enhanced call experience and a single point of contact for the support of all covered components. Customers can customize their Proactive Care reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response, or next-business day onsite response.

NOTE: HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

HPE Foundation Care

Provides flexibility to customize your reactive support level by selecting either 6-hour call-to-repair, 24x7 with 4-hour onsite response, or Next Business Day onsite response. The HPE Foundation Care with 6-hour call-to-repair is the highest level commitment to repair hardware within six hours after the initial hardware service request has been received and respond to software questions within two hours.

Service and Support

Other related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

<https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

HPE Installation and Startup of HPE Servers

Provides for the installation of your new server and operating system. This service will assist in bringing your new HPE server and operating system into operation in a timely and professional manner. This service provides a trained Hewlett Packard Enterprise service specialist to perform an installation that meets Hewlett Packard Enterprise quality standards. The service highlights include: planning, deployment on site, Installation verification tests, and customer orientation session.

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services “building blocks.” You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others’ products.

HPE Flexible Capacity

With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the “heavy lifting” needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

HPE Support Credits

Offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.com/support/hpesc>

HPE's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

NOTE: *HPE Support Center Mobile App is subject to local availability.

For more information: <http://www.hpe.com/services>

Service and Support

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 quick-specs, 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

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 an HPE approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information.

Please select one –L21 processor required below.

For second processor, please select the same processor model with –B21

For example: first processor, select P10488-L21 then for second processor, select P10488-B21.

NOTE: Maximum memory capacity per processor is dependent on processor models. All processors support up to 768 GB max memory per processor except “M” model processors will support up to 1.5 TB max memory per processor.

NOTE: Mixing of 2 different processor models are NOT allowed.

NOTE: DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

Step 1: Choose your CTO Server

HPE ProLiant XL270d Gen10 Configure-to-order Server

P00392-B21

NOTE: Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

Step 2: For traditional PCIe GPU and Accelerator support

PCIe GPU support

HPE XL270d Gen10 v2 8 PCIe GPU FIO Module

P13153-B22

HPE XL270d Gen10 PCIe GPU FIO Enablement Kit

P03032-B22

NOTE: only one GPU Enablement kit required for 8 GPU.

HPE NVIDIA Tesla P40 24GB Computational Accelerator

Q0V80A

HPE NVIDIA Tesla T4 16GB Computational Accelerator

ROW29A

HPE NVIDIA Tesla V100 PCIe 32GB Computational Accelerator

Q9U36A

HPE NVIDIA Quadro RTX 6000 Graphics Accelerator

R0Z45A

HPE NVIDIA Quadro RTX 8000 Graphics Accelerator

R1F97A

HPE NEC Vector Engine Accelerator Module

Q7G75A

NOTE: only one version of GPU or Accelerator supported, mixed GPU configurations not supported. Maximum of 8 GPU per GPU Module for all accelerators except the Tesla T4. The Tesla T4 is a Low Profile GPU and can be supported in the PCIe slots normally reserved on the GPU Module for the fabric adapters, increasing total GPU count for T4 to as many as 12. For this configuration server fabric connections can be supported via the FlexibleLOM or the system board PCIe slot.

HPE 4 GPU NVLink Topology A FIO Kit

P12231-B21

HPE 4 GPU NVLink Topology B FIO Kit

P12237-B21

HPE 4 GPU NVLink Topology C FIO Kit

P12232-B21

NOTE: only one topology may be set at a time. This can be reset in the field via BIOS to best match your workload.

Configuration Information

Step 2a: For NVLink GPU support

SXM2

HPE XL270d Gen10 8 SXM2 GPU FIO Module P01786-B22

HPE XL270d Gen10 SXM2 Heat Sink FIO Kit P02939-B22

NOTE: SXM-2 Heatsink kit supports 4 NVLink enabled SXM-2 GPU per kit

NOTE: Configurations of 4 or 8 SXM-2 GPU supported.

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

HPE NVIDIA Tesla V100 SXM2 32GB Computational Accelerator Q9U37A

NOTE: only one version of GPU supported, mixed GPU configurations not supported. Maximum of 8 GPU per GPU Module.

Step 3: Choose Processors

Platinum Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Platinum 8176 (2.1GHz/28-core/165W) FIO Processor Kit P01276-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8160 (2.1GHz/24-core/150W) FIO Processor Kit P10488-L21

Gold Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Gold 5120 (2.2GHz/14-core/105W) FIO Processor Kit P09138-L21

HPE XL270d Gen10 Intel Xeon-Gold 6140M (2.3GHz/18-core/140W) FIO Processor Kit P02019-L21

HPE XL270d Gen10 Intel Xeon-Gold 6142M (2.6GHz/16-core/150W) FIO Processor Kit P02020-L21

HPE XL270d Gen10 Intel Xeon-Gold 6154 (3.0GHz/18-core/200W) FIO Processor Kit P11490-L21

HPE XL270d Gen10 Intel Xeon-Gold 6152 (2.1GHz/22-core/140W) FIO Processor Kit P01277-L21

HPE XL270d Gen10 Intel Xeon-Gold 6150 (2.7GHz/18-core/165W) FIO Processor Kit P01278-L21

HPE XL270d Gen10 Intel Xeon-Gold 6148 (2.4GHz/20-core/150W) FIO Processor Kit P01279-L21

Gold Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Gold 6142 (2.6GHz/16-core/150W) FIO Processor Kit P01280-L21

HPE XL270d Gen10 Intel Xeon-Gold 6140 (2.3GHz/18-core/150W) FIO Processor Kit P01281-L21

HPE XL270d Gen10 Intel Xeon-Gold 6136 (3.0GHz/12-core/150W) FIO Processor Kit P01282-L21

HPE XL270d Gen10 Intel Xeon-Gold 6126 (2.6GHz/12-core/120W) FIO Processor Kit P01284-L21

HPE XL270d Gen10 Intel Xeon-Gold 6134 (3.2GHz/8-core/130W) FIO Processor Kit P01283-L21

HPE XL270d Gen10 Intel Xeon-Gold 6144 (3.5GHz/8-core/150W) FIO Processor Kit P08156-L21

HPE XL270d Gen10 Intel Xeon-Gold 6146 (3.2GHz/12-core/165W) FIO Processor Kit P09134-L21

HPE XL270d Gen10 Intel Xeon-Gold 6130 (2.1GHz/16-core/125W) FIO Processor Kit P09136-L21

Bronze Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Bronze 3104 (1.7GHz/6-core/85W) FIO Processor Kit P01285-L21

Platinum Second Generation Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Platinum 8280 (2.7GHz/28-core/205W) FIO Processor Kit P16874-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8276 (2.2GHz/28-core/165W) FIO Processor Kit P09583-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8270 (2.7GHz/26-core/205W) FIO Processor Kit P10510-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8268 (2.9GHz/24-core/205W) FIO Processor Kit P10512-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8260M (2.4GHz/24-core/165W) FIO Processor Kit P09585-L21

HPE XL270d Gen10 Intel Xeon-Platinum 8260 (2.4GHz/24-core/165W) FIO Processor Kit P10514-L21

Configuration Information

Second Generation Intel® Xeon® Scalable Processors

HPE XL270d Gen10 Intel Xeon-Gold 6240Y (2.6GHz/18-14-8-core/150W) FIO Processor Kit P09609-L21

NOTE: The Intel Xeon-Gold 6240Y provides a unique opportunity for customers to choose one processor, yet vary the core count or frequency simply. Ideal for Proof of Concept work to test core and frequency dependency of your code base.

HPE XL270d Gen10 Intel Xeon-Gold 6254 (3.1GHz/18-core/200W) FIO Processor Kit P09957-L21

HPE XL270d Gen10 Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) FIO Processor Kit P09588-L21

HPE XL270d Gen10 Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) FIO Processor Kit P09589-L21

HPE XL270d Gen10 Intel Xeon-Gold 6246 (3.3GHz/12-core/165W) FIO Processor Kit P16870-L21

HPE XL270d Gen10 Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) Processor Kit P09590-L21

HPE XL270d Gen10 Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) FIO Processor Kit P12228-L21

HPE XL270d Gen10 Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) FIO Processor Kit P12227-L21

HPE XL270d Gen10 Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) FIO Processor Kit P12226-L21

HPE XL270d Gen10 Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) FIO Processor Kit P09591-L21

HPE XL270d Gen10 Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) FIO Processor Kit P09610-L21

HPE XL270d Gen10 Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) FIO Processor Kit P09611-L21

HPE XL270d Gen10 Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) FIO Processor Kit P09613-L21

HPE XL270d Gen10 Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) FIO Processor Kit P09615-L21

Intel Xeon-Gold 5218R (2.1GHz/20-core/125W) Processor Kit for HPE ProLiant XL270d Gen10 P24945-B21

Intel Xeon-Gold 6242R (3.1GHz/20-core/205W) Processor Kit for HPE ProLiant XL270d Gen10 P24947-B21

Intel Xeon-Gold 5220R (2.2GHz/24-core/150W) Processor Kit for HPE ProLiant XL270d Gen10 P24949-B21

Intel Xeon-Gold 6240R (2.4GHz/24-core/165W) Processor Kit for HPE ProLiant XL270d Gen10 P24951-B21

Intel Xeon-Gold 6248R (3.0GHz/24-core/205W) Processor Kit for HPE ProLiant XL270d Gen10 P24953-B21

Intel Xeon-Gold 6230R (2.1GHz/26-core/150W) Processor Kit for HPE ProLiant XL270d Gen10 P24955-B21

Intel Xeon-Gold 6238R (2.2GHz/28-core/165W) Processor Kit for HPE ProLiant XL270d Gen10 P24957-B21

Intel Xeon-Gold 6258R (2.7GHz/28-core/205W) Processor Kit for HPE ProLiant XL270d Gen10 P24959-B21

Intel Xeon-Silver 4215R (3.2GHz/8-core/130W) Processor Kit for HPE ProLiant XL270d Gen10 P24961-B21

Intel Xeon-Gold 6250 (3.9GHz/8-core/185W) Processor Kit for HPE ProLiant XL270d Gen10 P24967-B21

Intel Xeon-Gold 6226R (2.9GHz/16-core/150W) Processor Kit for HPE ProLiant XL270d Gen10 P24939-B21

Intel Xeon-Gold 6246R (3.4GHz/16-core/205W) Processor Kit for HPE ProLiant XL270d Gen10 P24941-B21

Step 4: Choose Memory Options

Please select one or more memory from below.

For new Gen10 memory population rule whitepaper and optimal memory performance guidelines, please go to:

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

For Gen10 memory speed table, please go to: <https://www.hpe.com/docs/memory-speed-table>

For memory Reliability, Accessibility, Serviceability (RAS) features whitepaper like Gen10 Fast Fault Tolerance and legacy mirrored memory feature etc. please go to: <http://www.hpe.com/docs/memory-ras-feature>

NOTE: Maximum memory capacity and speed per processor is dependent on processor model selection or limitation.

NOTE: DDR4-2933 Memory Kits are only supported with 2nd Generation Intel Xeon Scalable Series Processors and DDR4-2666 Memory Kits are only supported with 1st Generation Intel Xeon Scalable Series Processors.

Configuration Information

Memory

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-H21
HPE 64GB (1x64GB) Quad Rank x4 DDR4-2666 CAS-19-19-19 Load Reduced Smart Memory Kit	815101-H21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2666 CAS-22-19-19 3DS Load Reduced Memory Kit	815102-H21
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) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-H21
HPE 128GB (1x128GB) Octal Rank x4 DDR4-2933 CAS-24-21-21 Load Reduced 3DS Smart Memory Kit	P00928-H21

Step 5: Choose Storage Options Drive Bay

Drive Bay

HPE DL38X Gen10 Premium 6 SFF SAS/SATA + 2 NVMe or 8 SFF SAS/SATA Bay Kit	826690-B21
NOTE: This kit provides support for up to 8 SFF SAS/SATA or 6 SAS/SATA + 2 NVMe drives per Box.	
NOTE: With NVMe drives the HPE XL270d Gen10 NVMe FIO Enablement Kit (P01056-B22) is required.	
HPE DL38X Gen10 SFF Box1/2 Cage/Backplane Kit	826691-B21

NOTE: Supports 8 SAS/SAFA SFF drives in Box 1 or 2 to a max of 24 SFF SAS/SATA front.

NOTE: Up to two bay kits supported per server.

NOTE: The Embedded AHCI SATA supports up to 12 total SATA drives in the drive bays, maximum of 6 per drive bay.

HPE Smart Array Controllers

An HPE Performance RAID controller is recommended for the best experience

HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller	804338-B21
HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller	804331-B21
HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21
HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21

NOTE: All performance RAID controllers are supported by the HPE Smart Storage Battery (P01367-B21), which supports multiple devices and is sold separately.

NOTE: Flexible Smart Array controllers do not consume a PCIe slot

NOTE: PCIe Smart Array and NVME both use the single PCIe slot on the system board. Only one can be supported at a time. HPE recommends the Flexible Smart Array in this case.

NOTE: Use of any of the HPE Performance RAID controllers requires the HPE XL270d Gen10 hardware RAID Smart Array Enablement Kit (P01836-B22)

HPE Cable Options

HPE XL270d Gen10 Hardware RAID Smart Array FIO Enablement Kit	P01836-B22
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NOTE: One kit required for use with any HPE Smart Array.

NOTE: One kit will support up to two drive bay kits

Configuration Information

HPE Smart Storage Battery

HPE 96W Smart Storage Battery (up to 20 Devices) with 260mm Cable Kit

P01367-B21

NOTE: One kit required for use with any HPE Smart Array.

NOTE: For details on cabling options, additional information available here: <http://www.hpe.com/info/CablingMatrixGen10>.

HPE Cable Options

Embedded SATA

HPE XL270d Gen10 Software RAID S100i FIO Enablement Kit

P02007-B22

NOTE: For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: <https://downloads.linux.hpe.com/SDR/project/lrrib/>

NOTE: One kit required for use with Embedded SATA using AHCI

NOTE: One kit will support up to two drive bays

NOTE: The Embedded AHCI SATA supports up to 12 total SATA drives in the drive bays, maximum of 6 per drive bay.

NOTE: For details on cabling options, additional information available here: <http://www.hpe.com/info/CablingMatrixGen10>

HPE Apollo PCIe/SATA M.2 FIO Riser Kit

863661-B22

HPE Legacy FIO Mode Setting

758959-B22

HPE iLO Common Password FIO Setting

P08040-B21

NOTE: UEFI is the default, this FIO part can be used for CTO to enable Legacy mode.

HPE NVME Controller

HPE XL270d Gen10 NVMe FIO Enablement Kit

P01056-B22

NOTE: One kit required for use with any HPE NVME.

NOTE: One kit will support up to two drive Premium drive bays

NOTE: NVME enablement kit uses the single PCIe slot on the system board. Only one can be supported at a time.

HPE Storage Options

Emulex Fibre Channel HBAs

HPE StoreFabric SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

Q0L11A

HPE StoreFabric SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

Q0L12A

HPE StoreFabric SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

Q0L13A

HPE StoreFabric SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

Q0L14A

HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter

R2E09A

HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter

R2E08A

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

R2J63A

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

R2J62A

Configuration Information

QLogic Fibre Channel HBAs

HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter	P9M75A
HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter	P9M76A

NOTE: For the complete listing of Fibre Channel Converged Network Adapters please see:
<https://www.hpe.com/us/en/product-catalog/servers/adapters/pip.models.hpe-storefabric-converged-networkadapters.4118472.html>

Step 6: Choose Power Supplies and power options Select up to two (2) power supplies from below.

Two power supplies come standard in the HPE ProLiant XL270d Gen10 server. Additional power supplies can be selected to provide redundant power to a total of up to four power supplies per server for 2+2 redundancy.

Power Supplies and power options

HPE Apollo 2200W Platinum Hot Plug FIO Power Supply Kit	P01062-B22
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Step 7: Choose additional options for Factory Integration from Core and Additional Options sections below

Core Options

HPE Drives

SSD Selection

To streamline the configuration process for HPE ProLiant Gen10 servers and to provide the best product availability, HPE recommends SSDs from the list located here: <http://www.hpe.com/products/recommend>.

Enterprise – 12G SAS – SFF – Hard Disk Drives

HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-H21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-H21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-H21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-H21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-H21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-H21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-H21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-H21

Midline – 12G SAS – SFF – Hard Disk Drives

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-H21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-H21

Midline – 6G SATA – SFF – Hard Disk Drives

HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-H21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-H21

Mixed Use – 12G SAS – SFF – Solid State Drives

HPE 3.84TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10460-H21
HPE 1.92TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10454-H21
HPE 960GB SAS 12G Mixed Use SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10448-H21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-H21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04527-H21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04533-H21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04537-H21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04539-H21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-H21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09090-H21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09092-H21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09094-H21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09096-H21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	P19913-H21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	P19919-H21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	P19915-H21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty SSD	P19917-H21

Write Intensive – 12G SAS – SFF – Solid State Drives

HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04541-H21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04543-H21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04545-H21
HPE 3.2TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04547-H21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09098-H21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09100-H21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09102-H21

Core Options

Read Intensive – 12G SAS – SFF – Solid State Drives

HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10446-H21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10444-H21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10442-H21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10440-H21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04517-H21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04519-H21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04521-H21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04523-H21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06584-H21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06586-H21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06588-H21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06590-H21
HPE 15.3TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06592-H21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	P19907-H21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	P19903-H21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	P19905-H21
HPE 15.36TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	P19911-H21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty SSD	P19909-H21

Read Intensive – 6G SATA – SFF – Solid State Drives

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05946-H21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05938-H21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05932-H21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05928-H21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05924-H21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04560-H21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06194-H21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06196-H21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06198-H21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06200-H21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04474-H21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04476-H21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04478-H21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04480-H21
HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04482-H21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18424-H21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18420-H21
HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18430-H21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18422-H21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18426-H21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18428-H21

Core Options

Mixed Use - 6G SATA - SFF - Solid State Drives

HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05994-H21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05986-H21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05980-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05976-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09712-H21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09716-H21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09722-H21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P00896-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-H21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07926-H21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07930-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18432-H21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18434-H21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18438-H21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Multi Vendor SSD	P18436-H21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P13660-H21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P13658-H21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P13664-H21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P13662-H21
HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P21517-H21

HPE PCIe Workload Accelerator Options

HPE 6.4TB NVMe x8 Lanes Mixed Use HHHH 3yr Wty Digitally Signed Firmware Card	P10268-H21
HPE 3.2TB NVMe x8 Lanes Mixed Use HHHH 3yr Wty Digitally Signed Firmware Card	P10266-H21
HPE 1.6TB NVMe x8 Lanes Mixed Use HHHH 3yr Wty Digitally Signed Firmware Card	P10264-H21
HPE 750GB PCIe x4 Lanes Write Intensive HHHH 3yr Wty Digitally Signed	878038-H21

Read Intensive - NVMe - SFF - Solid State Drives

HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07190-H21
HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10208-H21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07192-H21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10210-H21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07194-H21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P10212-H21
HPE 7.68TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07196-H21
HPE 15.36TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07198-H21
HPE 2TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13695-H21
HPE 4TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13697-H21
HPE 1.92TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13678-H21
HPE 3.84TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13680-H21
HPE 7.68TB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13682-H21
HPE 960GB NVMe x4 Lanes Read Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13676-H21

Core Options

Mixed Use - NVMe - SFF - Solid State Drives

HPE 800GB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07179-H21
HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07181-H21
HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13699-H21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07183-H21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13701-H21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P07185-H21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13703-H21
HPE 800GB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13668-H21
HPE 1.6TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13670-H21
HPE 6.4TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13674-H21
HPE 3.2TB NVMe x4 Lanes Mixed Use SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P13672-H21

Write Intensive – NVMe – SFF – Solid State Drives

HPE 375GB NVMe x4 Lanes Write Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	878014-H21
HPE 750GB NVMe x4 Lanes Write Intensive SFF (2.5in) SCN 3yr Wty Digitally Signed Firmware SSD	P06952-H21

NOTE: A Premium (826690-B21) drive cage is required to support these drives in conjunction with a HPE XL270d Gen10 NVMe Enablement Kit (P01056-B22.)

NOTE: HPE has qualified the NVMe drive portfolio using the Operating System inbox drivers, full detail on the [HPE Solid State Drive QuickSpecs](#)

Mixed Use - 6G SATA - M.2 - Solid State Drives

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875488-H21
HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875490-H21
HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD	875492-H21

Read Intensive – 6G SATA – M.2 – Solid State Drives

HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875498-H21
HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD	875500-H21

NOTE: M.2 drives use embedded AHCI SATA controller only.

NOTE: M.2 supports Software RAID only.

HPE Networking

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 562T Adapter	817738-B21
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25 Gigabit Ethernet adapters

HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter	867328-B21
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100 Gigabit Ethernet adapters

HPE Ethernet 100Gb 1-port 842QSFP28 Adapter	874253-B21
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NOTE: The HPE Apollo 6500 Gen10 ships with 4x 1 Gb Embedded.

NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information:

<http://www.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html>

Core Options

FlexibleLOM adapters

HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter	867334-B21
HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter	817749-B21
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 4-port 536FLR-T Adapter	764302-B21
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	727054-B21
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	727055-B21
HPE Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
HPE Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

NOTE: The HPE Apollo 6500 Gen10 ships with 4x 1 Gb Embedded.

NOTE: Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. Please see the related NIC QuickSpecs for Technical Specifications and additional information:

<http://www.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html>

HPE InfiniBand

HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-H21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-H21
HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter	872725-H21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter	872726-H21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21
HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 Adapter	P06154-H21
HPE InfiniBand HDR PCIe3 Auxiliary Card with 350mm Cable Kit	P06154-H23
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 Adapter	P06250-H21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 Adapter	P06251-H21

Additional Options

Embedded Management

HPE iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
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
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

NOTE: Licenses ship without media.

Converged Infrastructure Management

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView Physical Media Kit LTU	E5Y37A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A

HPE Racks

Please see the [HPE Advanced Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

Please see the [HPE Enterprise Series Racks QuickSpecs](#) for information on additional racks options and rack specifications.

HPE Power Distribution Units (PDUs)

Please see the [HPE Basic Power Distribution Units \(PDU\) QuickSpecs](#) for information on these products and their specifications.

Please see the [HPE Metered Power Distribution Units \(PDU\) QuickSpecs](#) for information on these products and their specifications.

Please see the [HPE Intelligent Power Distribution Unit \(PDU\) QuickSpecs](#) for information on these products and their specifications.

Please see the [HPE Metered and Switched Power Distribution Units \(PDU\) QuickSpecs](#) for information on these products and their specifications.

HPE Uninterruptible Power Systems (UPS)

To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on these products and their specifications.

Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on these products and their specifications.

HPE Rack Options

Please see the [HPE KVM Switches web page](#) for information on these products and their specifications.

Additional Options

Rail Kits

Rail kit contains telescoping rails which allow for in-rack serviceability.

Hot plug fan functionality requires the use of the Cable Management feature of the rail kit, which will require the use of 1200mm deep racks.

CAUTION: Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HPE s6500 Chassis Handles Kit 608477-B21

HPE XL270d Gen10 Rail Kit P02008-B21

NOTE: Server comes standard from our factory with rack kit, this kit is intended for additional bench support/test lab support.

HPE Support Services

Installation & Startup Services

HPE Install Apollo 6500 Gen 10 Service HA113A1#5VW

HPE Installation and Startup Apollo 6500 Gen 10 Service HA114A1#5VW

Proactive Care

HPE 3 Year Proactive Care 24x7 Apollo 6500 Gen 10 Service H1K92A3#Y41

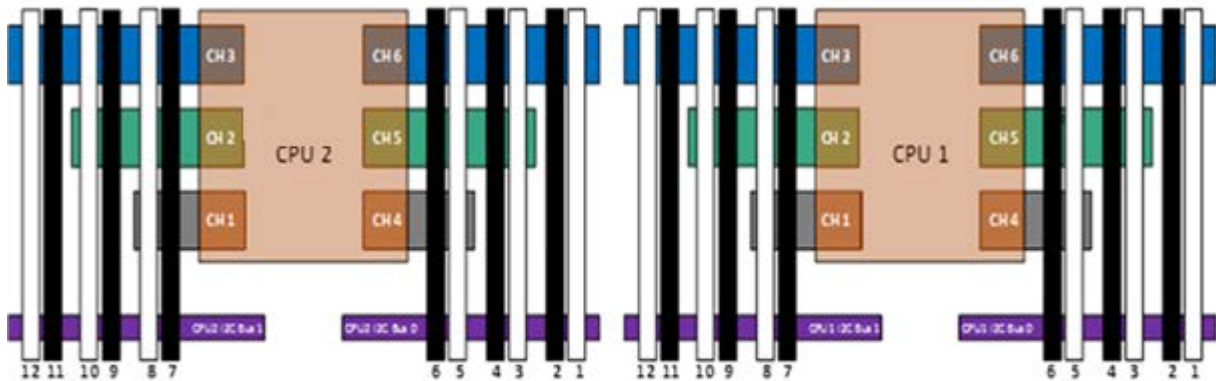
HPE 3 Year Proactive Care 24x7 with DMR Apollo 6500 Gen 10 Service H1K93A3#Y41

HPE 3 Year Proactive Care Call-To-Repair Apollo 6500 Gen 10 Service H1K94A3#Y41

HPE 3 Year Proactive Care Call-To-Repair 24x7 with DMR Apollo 6500 Gen 10 Service H1K95A3#Y41

Memory

Memory Population guidelines



System Fans

DIMM Population Order											
1 DIMM							8				
2 DIMMs							8		10		
3 DIMMs							8		10		12
4 DIMMs			3		5		8		10		
5 DIMMs *			3		5		8		10		12
6 DIMMs	1		3		5		8		10		12
7 DIMMs *	1		3		5		7	8		10	12
8 DIMMs			3	4	5	6	7	8	9	10	
9 DIMMs *	1		3		5		7	8	9	10	11
10 DIMMs *	1		3	4	5	6	7	8	9	10	
11 DIMMs *	1		3	4	5	6	7	8	9	10	11
12 DIMMs	1	2	3	4	5	6	7	8	9	10	11

HPE ProLiant Gen10 12 slot per CPU

General Memory Population Rules and Guidelines:

- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two-processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.
- For details on the HPE Server Memory Options Population Rules, visit: <http://www.hpe.com/docs/memory-population-rules>
- To realize the performance memory capabilities listed in this document, HPE DDR4 SmartMemory is required. For additional information, please see the [HPE DDR4 SmartMemory QuickSpecs](#).

Memory

NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model.

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

Option kits- these versions of the products are available for purchase for in field installation or upgrades

HPE XL270d Gen10 NVMe Enablement Kit	P01056-B21
HPE Apollo 2200W Platinum Hot Plug Power Supply Kit	P01062-B21
HPE XL270d Gen10 Hardware RAID Smart Array Enablement Kit	P01836-B21
HPE FIO Enable Smart Array SW RAID	784308-B21
HPE XL270d Gen10 v2 8 PCIe GPU Module	P13153-B21
HPE XL270d Gen10 Software RAID S100i Enablement Kit	P02007-B21
HPE XL270d Gen10 Rail Kit	P02008-B21
HPE XL270d Gen10 PCIe GPU Enablement Kit	P03032-B21
HPE Apollo PCIe/SATA M.2 Riser Kit	863661-B21

NOTE: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

Technical Specifications

System Unit Specifications

Server Dimensions

L x W x D 6.9 x 17.3 x 33.5 in (17.5 x 43.9 x 85.1 cm)
4U

Weight (approximate)

Maximum: 59.0 kg
130.0 lbs

Minimum: 25 kg
55 lbs

Input Requirements (per power supply)	Rated Line Voltage 200 to 240 VAC
-------------------------------------------------	---------------------------------------------

Power Supply Output (per power supply)	Rated Steady-State Power For 2200W Power Supply: 2200W (at 230VAC / 240VDC)
--------------------------------------------------	---------------------------------------------------------------------------------------

BTU Rating	Maximum For 2200W Power Supply: 7507 BTU/hr (at 200VAC – 240VAC)
-------------------	----------------------------------------------------------------------------

System Inlet Temperature

Standard Operating Temperature 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.

System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).

Extended Ambient Operating Temperature 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.

Non-operating -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

Technical Specifications

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

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 25°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

	Entry	Typical
LWAd - Idle	7.2 B	7.8 B
LpAM - Idle	57 dBA	62 dBA
LWAd - Operating	8.5 B	8.6 B
LpAM - Operating	70 dBA	71 dBA

Emissions Classification (EMC) – Regulatory Information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

<http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>

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

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

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

Summary of Changes

Date	Version History	Action	Description of Change
24-Feb-2020	Version 16	Changed	Overview, Standard Features and Configuration Information sections were updated
02-Dec-2019	Version 15	Changed	SKUs were updated in Configuration Information and Core Options sections Obsolete SKUs were removed.
07-Oct-2019	Version 14	Changed	Overview, Standard Features and Core Options sections were updated. Obsolete SKU was removed.
03-Sep-2019	Version 13	Changed	Configuration Information section was updated
12-Aug-2019	Version 12	Changed	Standards Features, Configuration Information and Core Options, sections were updated.
05-Aug-2019	Version 11	Added	Core Options section was updated Obsolete SKUs were removed
03-Jun-2019	Version 10	Changed	Overview, Standard Features, Configuration Information, Core Options sections were updated Obsolete SKUs were removed
18-Apr-2019	Version 9	Changed	Obsolete SKUs were removed. SKUs were updated.
02-Apr-2019	Version 8	Changed	Standard Features, Configuration Information and Core options sections were updated
04-Feb-2019	Version 7	Changed	Overview, Standard Features, Configuration Information, Core Options and Additional Options sections were updated. Obsolete SKUs were removed
03-Dec-2018	Version 6	Changed	Standard Features, Core Options sections were updated. Obsolete SKUs were removed
01-Oct-2018	Version 5	Changed	Overview, Standard Features, Configuration Information, Core Options, Additional Options and Technical Specifications sections were updated. SKU s descriptions were updated.
06-Aug-2018	Version 4	Changed	SKUs and description were updated
04-Jun-2018	Version 3	Changed	Update several sections throughout the document
07-May-2018	Version 2	Updated	Update several sections throughout the document
02-Apr-2018	Version 1	New	New QuickSpecs



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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less

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