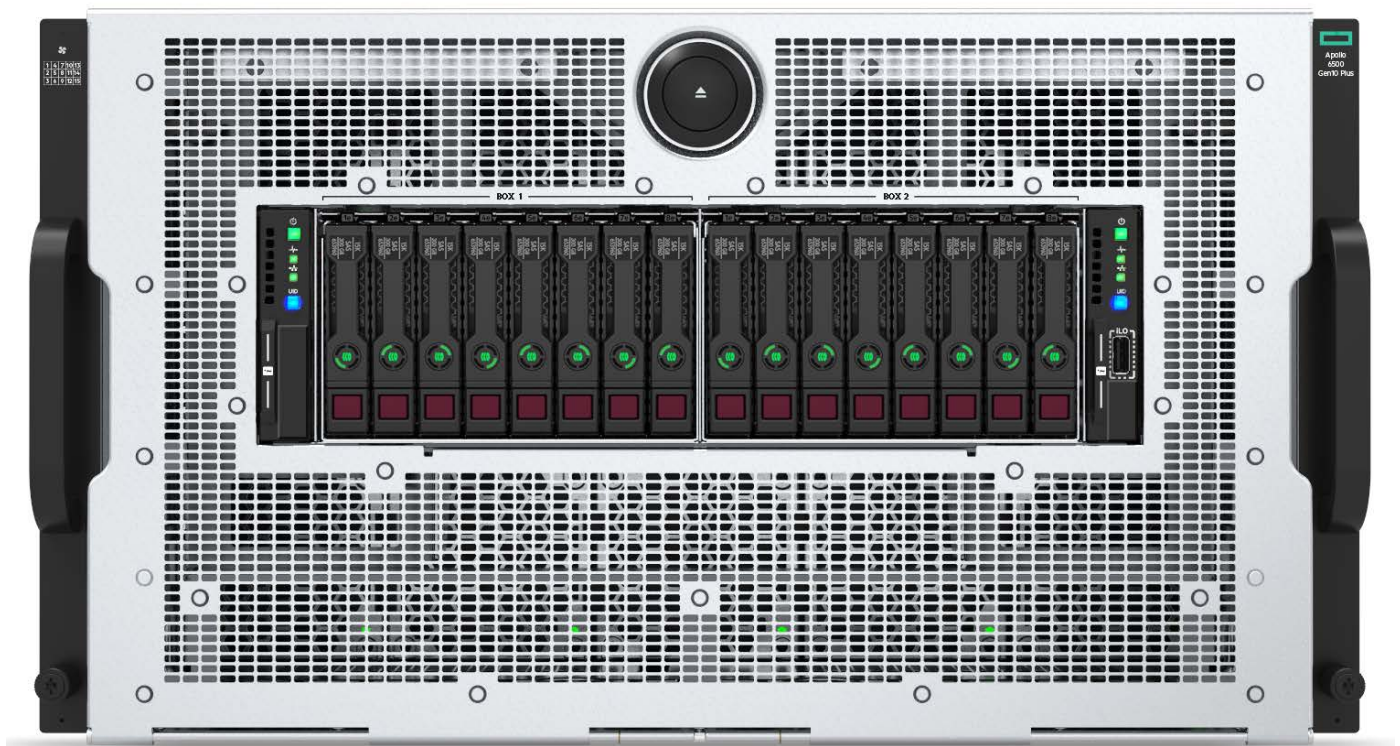


Overview

HPE Apollo 6500 Gen10 Plus System

Built for the Exascale Era the HPE Apollo 6500 Gen10 Plus Systems accelerates performance with powered by NVIDIA HGX A100 Tensor Core GPUs with NVLink or AMD Instinct™ MI100 with 2nd Gen Infinity Fabric™ Link to take on the most complex HPC and AI workloads. This purpose-built platform provides enhanced performance with premier GPUs, fast GPU interconnects, high-bandwidth fabric, and configurable GPU topology, providing rock-solid reliability, availability, and serviceability (RAS). Configure with single or dual processor options for a better balance of processor cores, memory, and I/O. Improve system flexibility with support for 4, 8, 10, or 16 GPUs and a broad selection of operating systems and options all within a customized design to reduce costs, improve reliability, and provide leading serviceability.

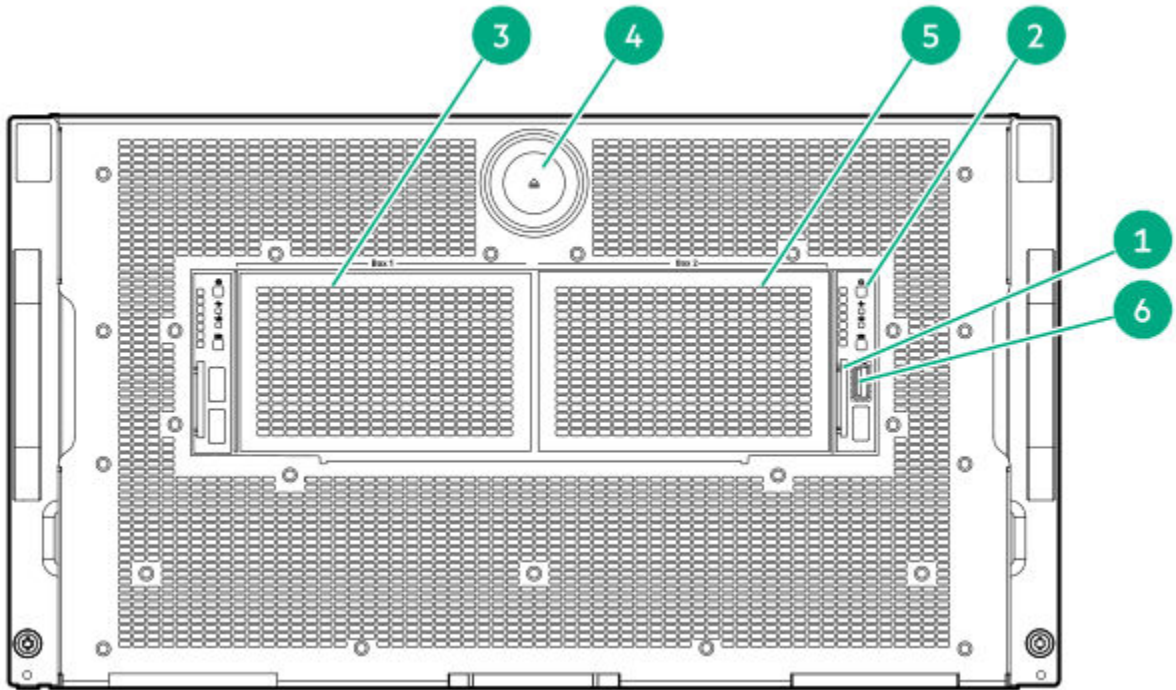
Simplify management, reduce costs, and improve reliability and performance for HPC and AI workloads.



What's New

- NVIDIA HGX A100 Tensor Core GPUs with NVIDIA® NVLink® and NVSwitch
- AMD Instinct™ MI100 with 2nd Gen Infinity Fabric™ Link
- **Coming Soon:** Direct Liquid Cooling System fully integrated, installed, and supported by HPE. Also supporting PCIe Gen4 GPUs provides extreme compute flexibility.
- Flexible support and options: InfiniBand, Ethernet, or in early 2021 HPE Slingshot, Ubuntu and Enterprise OS such as Windows, VMware, Suse, Red Hat, Choice and HPE Pointnext for advisory, professional and operational services, along with flexible consumption model across the globe.
- Enterprise RAS with HPE iLO5, easy access modular design, and N+N power supplies.
- Save time and cost, gain improved user productivity with HPE iLO5
- World's most secure industry standard server using HPE iLO5

Overview

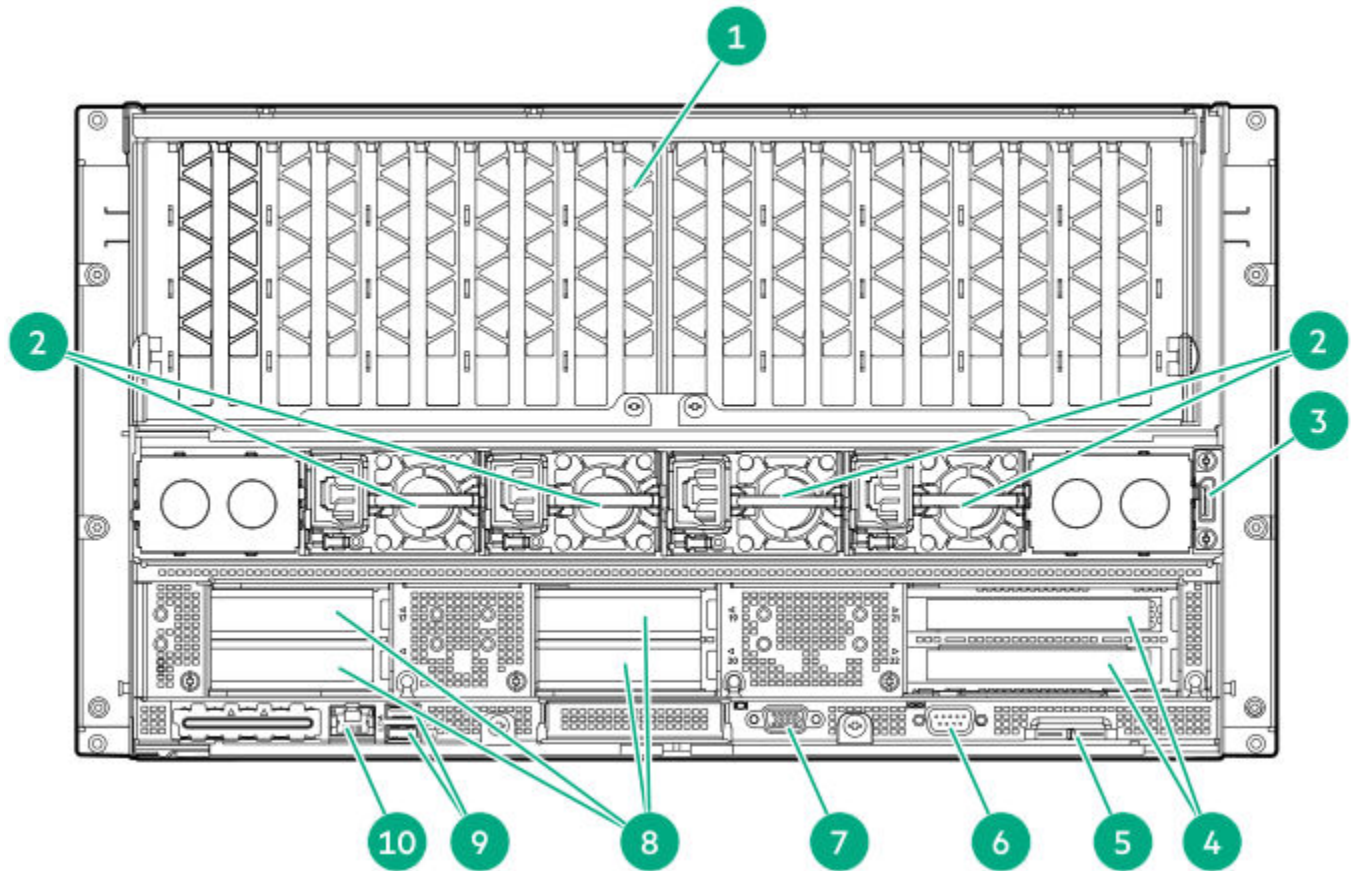


HPE ProLiant XL675d Gen10 Plus - Front Panel View

- | | |
|---|------------------------------------|
| 1. Serial number / iLO Information pull tab | 4. Chassis front door lever button |
| 2. Power Switch module | 5. Drive Box 2 |
| 3. Drive Box 1 | 6. Dedicated iLO management port |



Overview

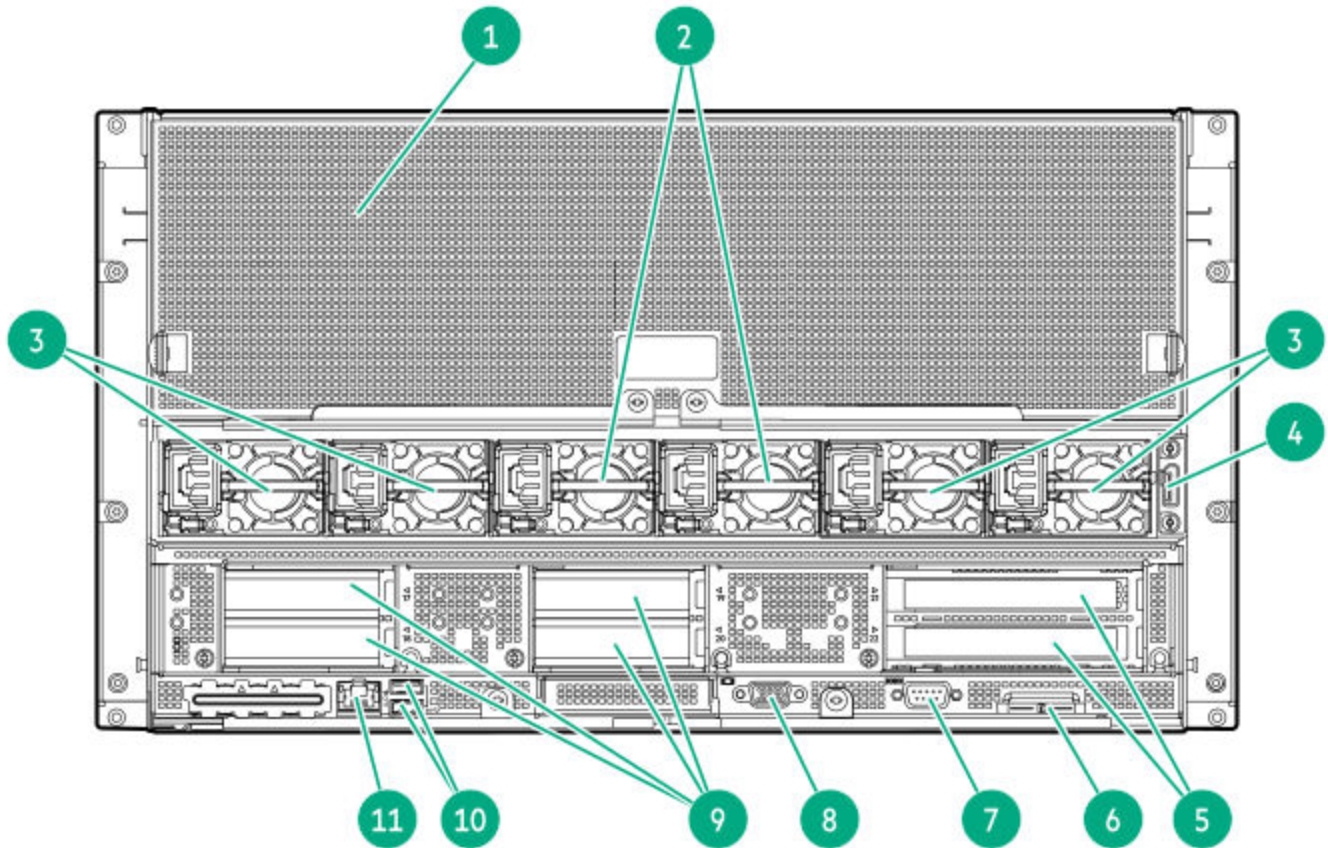


HPE ProLiant XL675d Gen10 Plus PCIe GPU Module - Rear View

- | | | | |
|----|---|-----|--|
| 1. | PCIe GPU tray | 6. | Optional Serial Port |
| 2. | 12 V power supplies (4) | 7. | Video connector |
| 3. | APM 2.0 connector | 8. | PCIe4 x16 low-profile expansion slots 17 to 20 |
| 4. | PCIe4 x16 half length/full height expansion slots 21 and 22 | 9. | USB 3.1 Gen1 connectors (2) |
| 5. | Serial Number / iLO Information pull tab | 10. | Dedicated iLO management port |



Overview

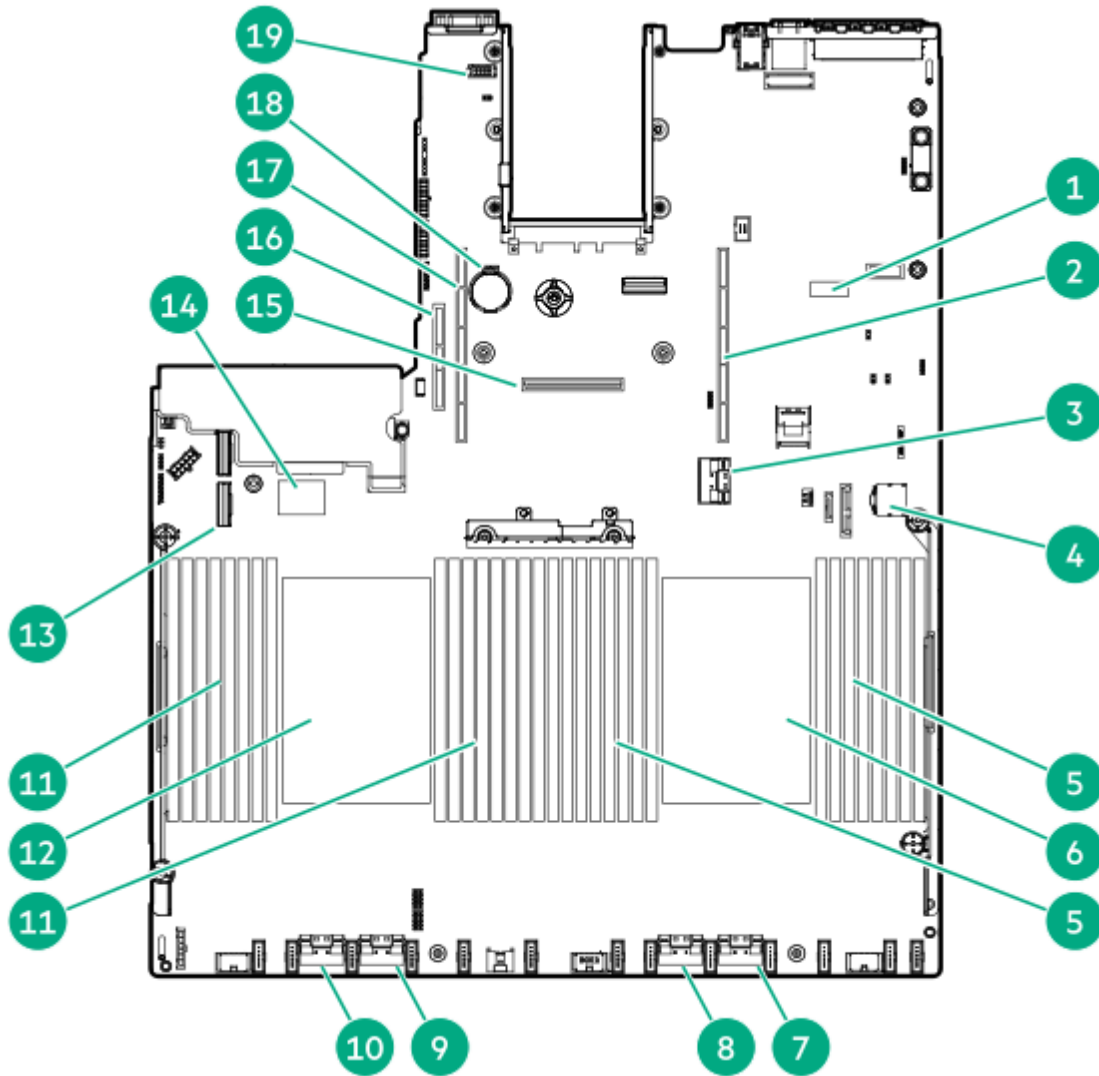


HPE ProLiant XL675d Gen10 Plus SXM4 GPU Module - Rear View

- | | | | |
|----|---|-----|--|
| 1. | SXM4 GPU tray | 7. | Optional Serial Port |
| 2. | 12 V power supplies (2) | 8. | Video connector |
| 3. | 54 V power supplies (4) | 9. | PCIe4 x16 low-profile expansion slots 17 to 20 |
| 4. | APM 2.0 connector | 10. | USB 3.1 Gen1 connectors (2) |
| 5. | PCIe4 x16 half length/full height expansion slots 21 and 22 | 11. | Dedicated iLO management port |
| 6. | Serial Number / iLO Information pull tab | | |



Overview

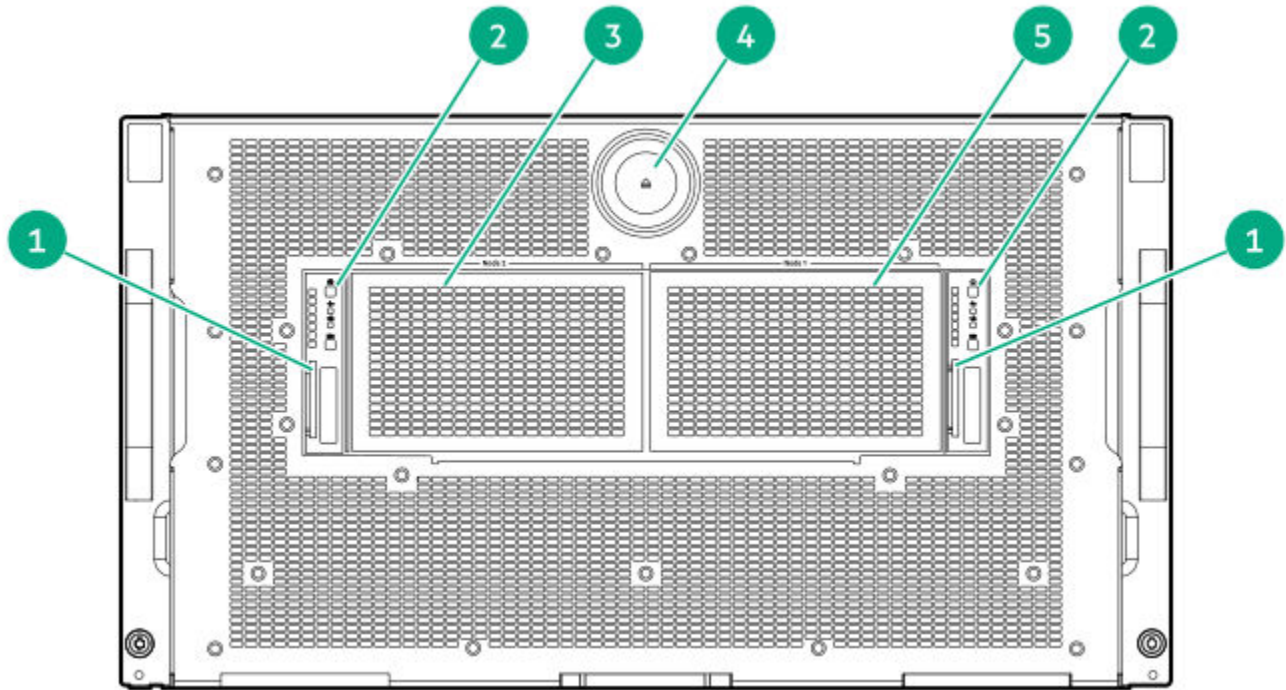


HPE ProLiant XL675d Gen10 Plus System Board Module

- | | |
|---|--|
| 1. System maintenance switch | 11. Processor 2 DIMMs |
| 2. Primary (processor 1) x16 PCIe riser connector | 12. Processor 2 |
| 3. x16 primary PCIe riser / PCIe jumper connector | 13. Embedded SATA connector |
| 4. Front power connector | 14. Dual USB port |
| 5. Processor 1 DIMMs | 15. Type-a storage controller slot |
| 6. Processor 1 | 16. Tertiary (processor 2) x16 PCIe riser connector |
| 7. x8 NVMe Slim SAS connector | 17. Secondary (processor 2) x16 PCIe riser connector |
| 8. x8 NVMe Slim SAS connector | 18. System battery |
| 9. x8 NVMe Slim SAS connector | 19. Rear Serial port connector |
| 10. x8 NVMe Slim SAS connector | |



Overview

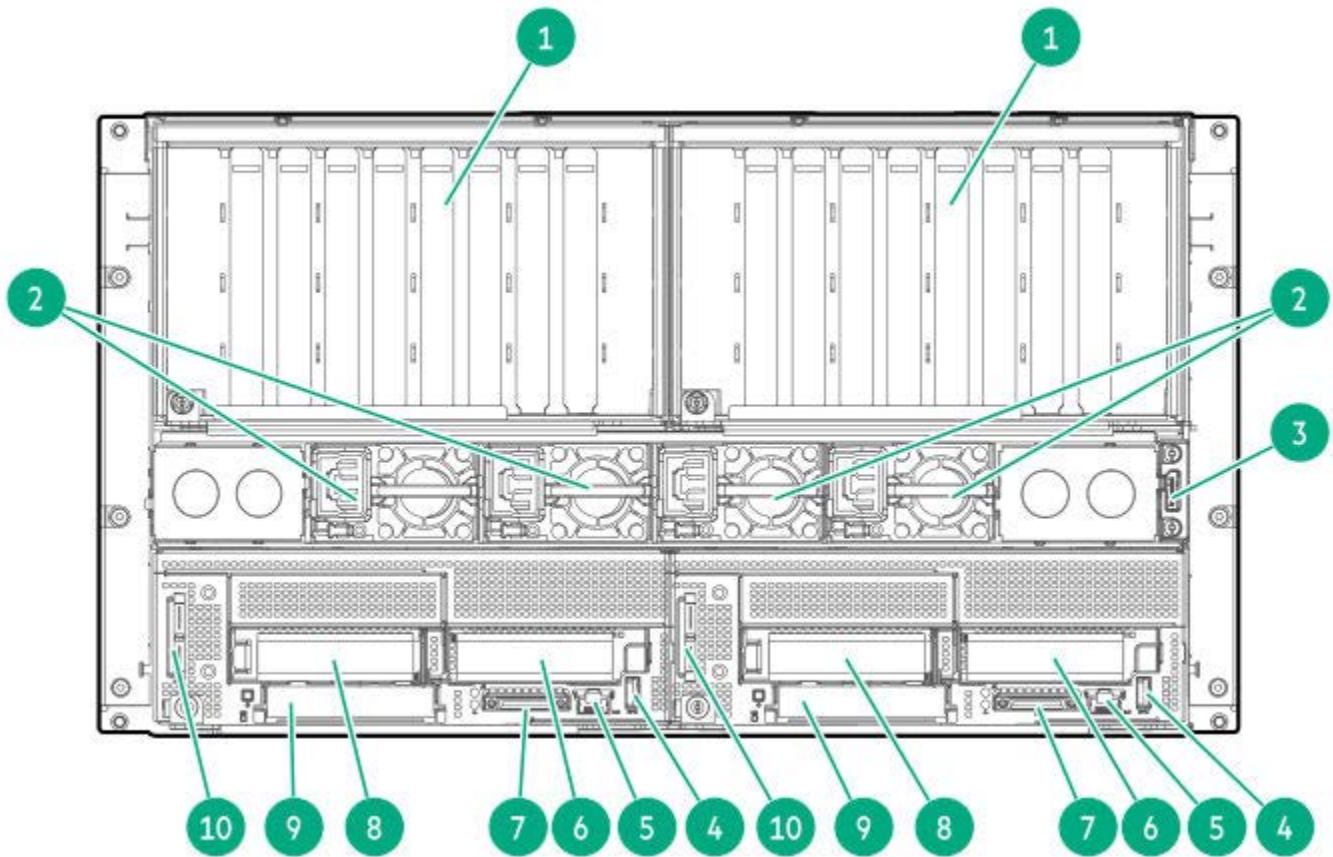


HPE ProLiant XL645d Gen10 Plus - Front Panel View

- | | | | |
|----|--|----|---------------------------------|
| 1. | Serial number / iLO Information pull tab | 4. | Chassis Front Door Lever button |
| 2. | Power Switch Module | 5. | Drive box 2 (labeled Node 1) |
| 3. | Drive box 1 (labeled Node 2) | | |



Overview

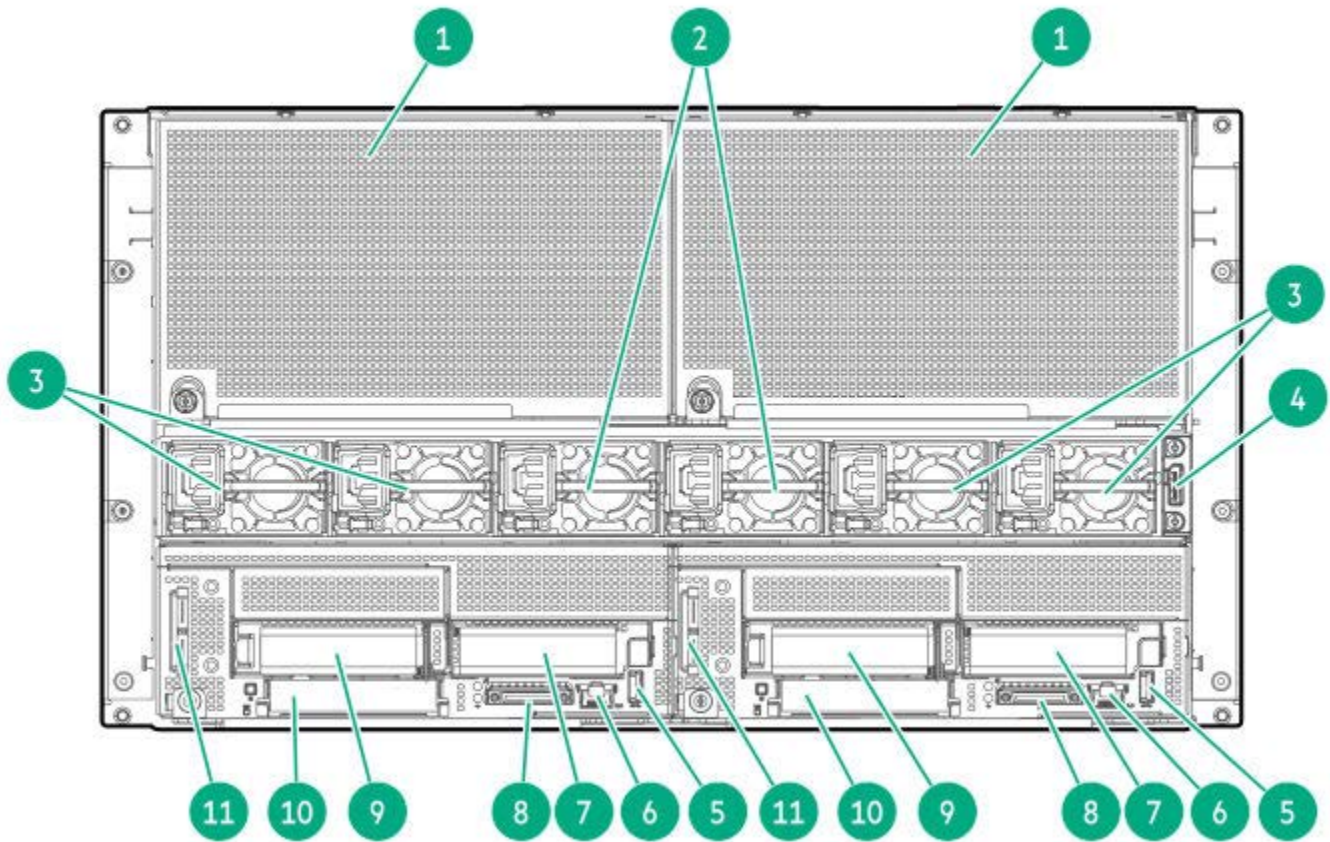


HPE ProLiant XL645d Gen10 Plus PCIe GPU Module - Rear View

- | | | | |
|----|-------------------------------|-----|--|
| 1. | PCIe GPU trays | 6. | Slot 2 PCIe4 x16 (16, 8, 4, 2, 1) |
| 2. | 12 V power supplies (4) | 7. | SUV port |
| 3. | iLO dedicated network port | 8. | Slot 1 PCIe4 x16 (16, 8, 4, 2, 1) |
| 4. | USB 3.1 Gen 1 Type-A port | 9. | OCP 3.0 NIC adapter slot blank |
| 5. | NIC / shared iLO network port | 10. | Serial number/iLO information pull tab |



Overview

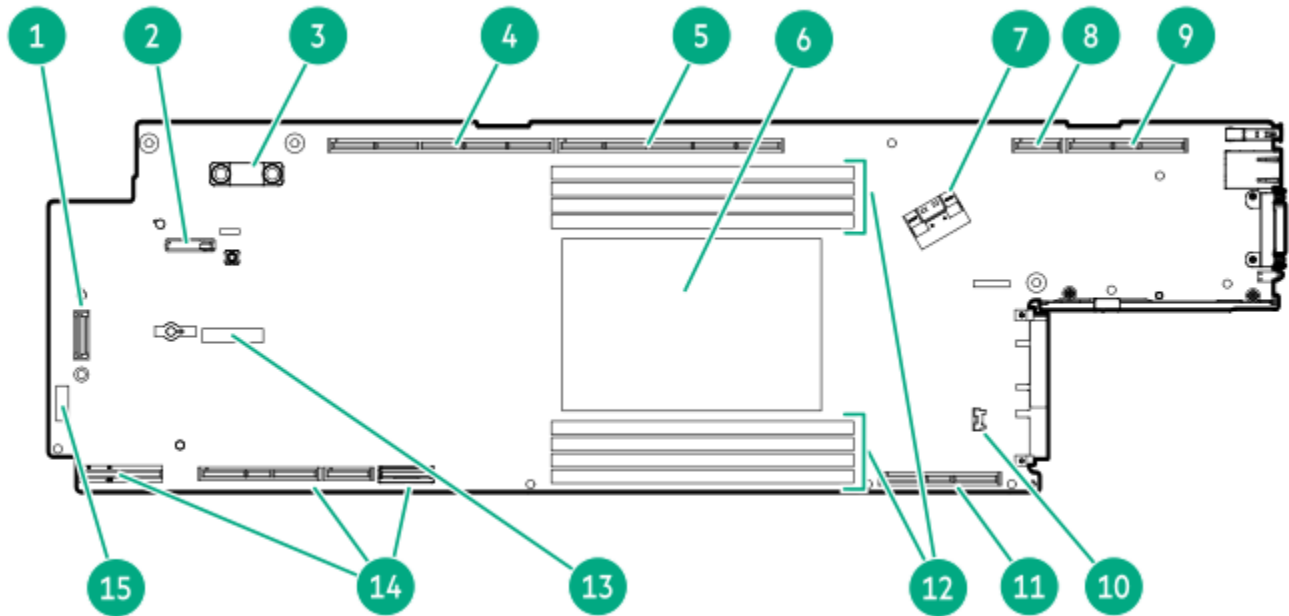


HPE ProLiant XL645d Gen10 Plus Modular SXM GPU Module - Rear View

- | | | | |
|----|-----------------------------|-----|--|
| 1. | SXM GPU trays | 7. | Slot 2 PCIe4 x16 (16, 8, 4, 2, 1) |
| 2. | 12 V power supplies (2) | 8. | SUV port |
| 3. | 54V power supplies (4) | 9. | Slot 1 PCIe4 x16 (16, 8, 4, 2, 1) |
| 4. | iLO dedicated network port | 10. | OCP 3.0 NIC adapter slot blank |
| 5. | USB 3.1 Gen 1 Type-A port | 11. | Serial number / iLO Information pull tab |
| 6. | NIC/shared iLO network port | | |



Overview



HPE ProLiant XL645d Gen10 Plus System Board Module

- | | |
|---|---|
| 1. HPE NS204i-t Gen10 Plus NVMe Boot Controller connector | 9. Secondary PCIe4 x16 riser connector 2 |
| 2. System battery | 10. System board module power button cable connector |
| 3. TPM connector | 11. Primary PCIe4 x16 riser connector 1 |
| 4. Secondary PCIe4 x16 riser connector 5 | 12. DIMM slots |
| 5. Secondary PCIe4 x16 riser connector 4 | 13. Slim SAS connector for M.2 SSD boot controller option |
| 6. Processor | 14. Tertiary PCIe4 x16 riser connector 6 |
| 7. x8 Slim SAS NVMe/SATA 6GB/s port | 15. System maintenance switch |
| 8. Secondary PCIe4 x16 riser connector 3 | |



Standard Features

Platform Information		
	HPE Apollo 6500 Gen10 Plus System	
	HPE ProLiant XL675d Server	HPE ProLiant XL645d Server
Chassis	HPE Apollo d6500 Gen10 Plus Configure-to-order Chassis (6U Chassis)	
Density / Scale	Dual Processor Server per chassis	Up to 2 Single Processor Servers per chassis
GPU	Up to 10 Double Wide PCIe or 16 Single Wide PCIe GPU Choice between: NVIDIA HGX™ A100 8-GPU, AMD Instinct™ MI100 with 2 nd Gen Infinity Fabric™, and other leading accelerators	Up to 4 Double Wide PCIe or 8 Single Wide PCIe GPU Choice between: NVIDIA HGX™ A100 4-GPU, AMD Instinct™ MI100 with 2 nd Gen Infinity Fabric™, and other leading accelerators
Interconnect	Support for up to six high speed fabric interconnects; whether Ethernet, Infiniband, or HPE Cray Slingshot	Support for up to three high speed fabric interconnects; whether Ethernet, Infiniband, or HPE Cray Slingshot
Processor	Dual AMD 2nd Gen EPYC™ Series Processor per node, up to 280W	Single AMD 2nd Gen EPYC™ Series Processor per node, up to 280W
Memory	32 3200MT/s DDR4 SmartMemory	8 3200MT/s DDR4 SmartMemory
Storage	Up to 16 SFF drives – Max 6 NVMe per server (M.2 optional)	Up to 8 SFF drives – Max 3 NVMe per server (M.2 optional)
System Management	HPE Integrated Lights Out (iLO 5), HPE Performance Cluster Manager (HPCM), HPE Container Platform, HPE OneView, Integrated Rack Consolidation Module (RCM)	
System Security	iLO 5 Silicon Root of Trust, iLO Advanced (Optional)	
OS Support	HPE Cray OS, Microsoft Windows Server, Red Hat, Ubuntu, VMware	
Power	Fully redundant power for all configurations with up to 6 3000W Platinum Hot Plug Power Supplies per chassis. Power Capping available at the server and chassis level; Rack and Row level Power Capping available with Apollo Platform Manager Kit. Shared power infrastructure at the chassis level.	
Cooling	15 - 80mm dual rotor hot pluggable chassis fans Coming Soon: Direct Liquid Cooling System fully integrated, installed, and supported by HPE	
Storage Controller	Embedded SATA; optional HPE E208i-a SR, P408i-a SR, and P816i-a SR series Smart Arrays	Embedded SATA; optional HPE E208e-p SR and P408e-p SR series Smart Arrays
Warranty	3 years parts / 3 years labor / 3 years onsite support	

Processors – Up to 2 of the following depending on model. All processors listed are compatible on both supported servers, except where denoted.

Notes:

- For more information regarding AMD 2nd Gen EPYC™ Series Processors, visit: <https://www.amd.com/en/products/epyc-server>.
- All AMD 2nd Gen EPYC™ Series Processor can support up to 2TB of memory each on the Apollo 6500 Gen10 Plus system, depending on the chosen DIMMs.
- Certain limitations may apply to select processors, please contact your HPE sales representatives for any questions on processor support needed.
- ** 7X02P AMD Processors are only compatible with the XL645d server.



Standard Features

AMD 2 nd Generation EPYC™ Series Processors							
AMD EPYC™ Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage (W)	Cache	Memory
EPYC 7H12	64	2.9 GHz	3.3 GHz	2TB	280	256MB	3200MT/s
EPYC 7F72	24	3.2 GHz	3.7 GHz	2TB	240	192MB	3200MT/s
EPYC 7F52	16	3.5 GHz	3.9 GHz	2TB	240	256MB	3200MT/s
EPYC 7F32	8	3.7 GHz	3.9 GHz	2TB	180	128MB	3200MT/s
EPYC 7742	64	2.25 GHz	3.4 GHz	2TB	225	256MB	3200MT/s
EPYC 7702P **	64	2.0 GHz	3.35 GHz	2TB	200	256MB	3200MT/s
EPYC 7702	64	2.0 GHz	3.35 GHz	2TB	200	256MB	3200MT/s
EPYC 7662	64	2.0 GHz	3.3 GHz	2TB	225	256MB	3200MT/s
EPYC 7642	48	2.3 GHz	3.3 GHz	2TB	225	256MB	3200MT/s
EPYC 7552	48	2.2 GHz	3.3 GHz	2TB	200	192MB	3200MT/s
EPYC 7542	32	2.9 GHz	3.4 GHz	2TB	225	128MB	3200MT/s
EPYC 7532	32	2.4 GHz	3.3 GHz	2TB	200	256MB	3200MT/s
EPYC 7502P **	32	2.5 GHz	3.35 GHz	2TB	180	128MB	3200MT/s
EPYC 7502	32	2.5 GHz	3.35 GHz	2TB	180	128MB	3200MT/s
EPYC 7452	32	2.35 GHz	3.35 GHz	2TB	155	128MB	3200MT/s
EPYC 7402P **	24	2.8 GHz	3.35 GHz	2TB	180	128MB	3200MT/s
EPYC 7402	24	2.8 GHz	3.35 GHz	2TB	180	128MB	3200MT/s
EPYC 7352	24	2.3 GHz	3.2 GHz	2TB	155	128MB	3200MT/s
EPYC 7302P **	16	3.0 GHz	3.3 GHz	2TB	155	128MB	3200MT/s
EPYC 7302	16	3.0 GHz	3.3 GHz	2TB	155	128MB	3200MT/s
EPYC 7262	8	3.2 GHz	3.4 GHz	2TB	155	128MB	3200MT/s

Chipset

No Chipset – System on Chip (SoC) design

On System Management Chipset

HPE iLO 5 GXP ASIC - 32MB Flash shares 512K NVRAM with BIOS

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

Memory

HPE ProLiant XL675d

Type:	HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)	
DIMM Slots Available	32	16 DIMM slots per processor, 8 channels per processor, 2 DIMMs per channel
Maximum capacity (LRDIMM)	4.0 TB	Up to 32 128 GB LRDIMM @ 3200 MT/s
Maximum capacity (RDIMM)	2.0 TB	Up to 32 64 GB RDIMM @ 3200 MT/s

Notes: When 2 DIMMs are populated per channel, memory speed drops to 2933 MT/s

HPE ProLiant XL645d

Type:	HPE DDR4 SmartMemory, Registered (RDIMM), Load Reduced (LRDIMM)	
DIMM Slots Available	8	8 DIMM slots per processor, 8 channels per processor, 1 DIMM per channel
Maximum capacity (LRDIMM)	1.0 TB	Up to 8 128 GB LRDIMM @ 3200 MT/s
Maximum capacity (RDIMM)	512 GB	Up to 8 64 GB RDIMM @ 3200 MT/s

Standard Features

Notes :

- Mixing of RDIMM and LRDIMM memory is not supported.
- Some memory kits may be subject to delayed availability.
- Memory DIMM availability with a server platform is dependent upon completion of certification testing.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.

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 – HPE ProLiant XL675d

Notes: Modular configurations are factory integrated options. See below for PCIe configurations.

PCIe Fabric Riser - Primary, Secondary, or Tertiary Riser					
Slot #	Technology	Bus Width	Connector Width	Slot Form Factor	Supported CPU
17	PCIe 4.0	x16	x16	Half-height, half-length slot	Processor 1
18	PCIe 4.0	x16	x16	Half-height, half-length slot	Processor 1
19	PCIe 4.0	x16	x16	Half-height, half-length slot	Processor 1 or 2 ***
20	PCIe 4.0	x16	x16	Half-height, half-length slot	Processor 1 or 2 ***
21	PCIe 4.0	x16	x16	Full-height, Full-length slot	Processor 1 or 2 ***
22	PCIe 4.0	x16	x16	Full-height, Full-length slot	Processor 1 or 2 ***

Notes: All Smart Array controllers should be installed in slot 21/22 before any of the slots 17-20. All systems will have a NIC installed in slot 21 or slot 22 as the default configuration.

*** Configurable in RBSU

PCIe GPU Riser					
Slot #	Instinct™ MI100 GPU with 4x4 bridge	HGX™ A100 GPU with 2x2 bridge	PCIe Double Wide	PCIe Single Wide	Supported CPU
1	✓*	✓**	✓	✓	Processor 1
2	✓	✓	✓	✓	Processor 1
3	✓	✓	✓	✓	Processor 1
4				✓	Processor 1
5	✓	✓	✓	✓	Processor 1
6				✓	Processor 1
7	✓	✓	✓	✓	Processor 1
8				✓	Processor 1
9	✓	✓	✓	✓	Processor 1 or 2 ***
10				✓	Processor 1 or 2 ***
11	✓	✓	✓	✓	Processor 1 or 2 ***
12				✓	Processor 1 or 2 ***
13	✓	✓	✓	✓	Processor 1 or 2 ***
14				✓	Processor 1 or 2 ***
15	✓	✓	✓	✓	Processor 1 or 2 ***
16	✓*	✓**	✓	✓	Processor 1 or 2 ***

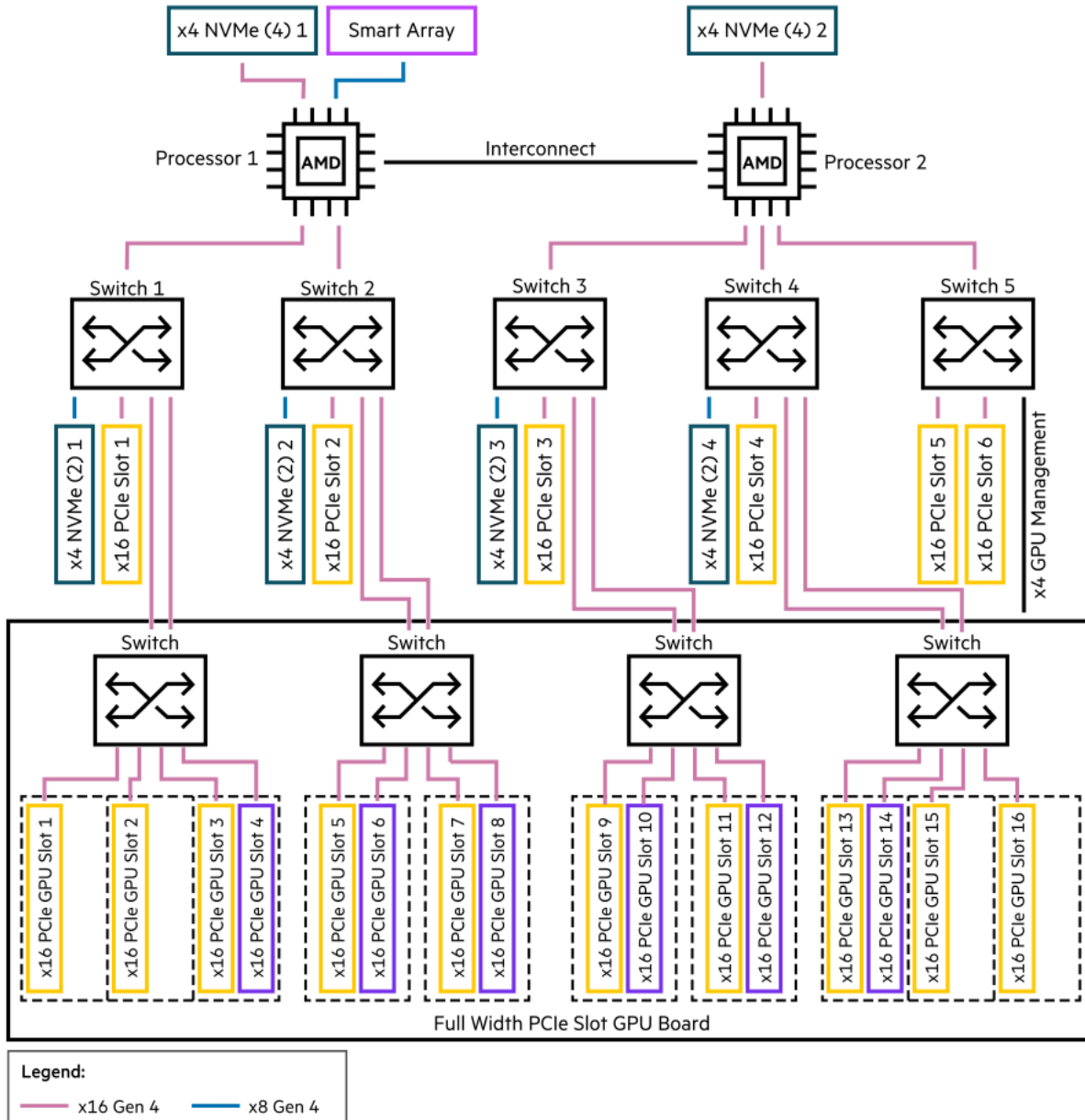
Notes:

- Single Wide and Double Wide GPUs are not able to be installed together. Different GPU types cannot be mixed.
- * Instinct™ MI100 with Infinity Flex 4x4 Bridge for HPE will follow the placement configuration: First set of four Bridged GPUs: GPU2, GPU3, GPU5, GPU7; Second set of four Bridged GPUs: GPU9, GPU11, GPU13, GPU15.
- ** The optimal configuration for the NVLINK bridges is 8 GPUs instead of 10, with the bridges installed in the following slot pairs: 2-3, 5-7, 9-11, and 13-15.
- *** Configurable in RBSU
- Unbridged GPUs can still be installed in PCIe1 and PCIe16 when we have linked GPUs in the other slots.



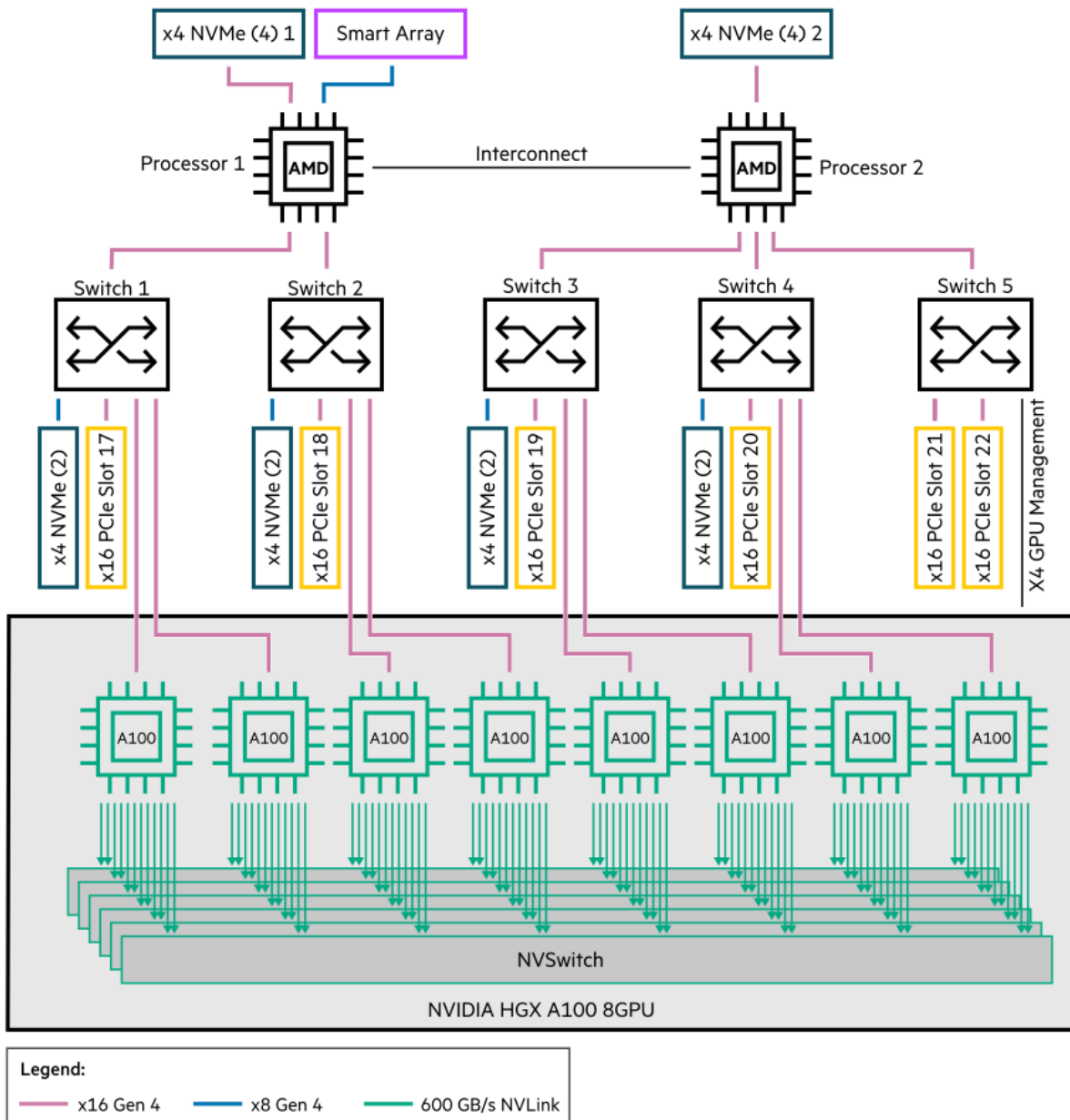
Optional Features

HPE ProLiant XL675d System Block Diagrams - PCIe GPU Configuration



Optional Features

HPE ProLiant XL675d System Block Diagrams – Modular SXM GPU Configuration

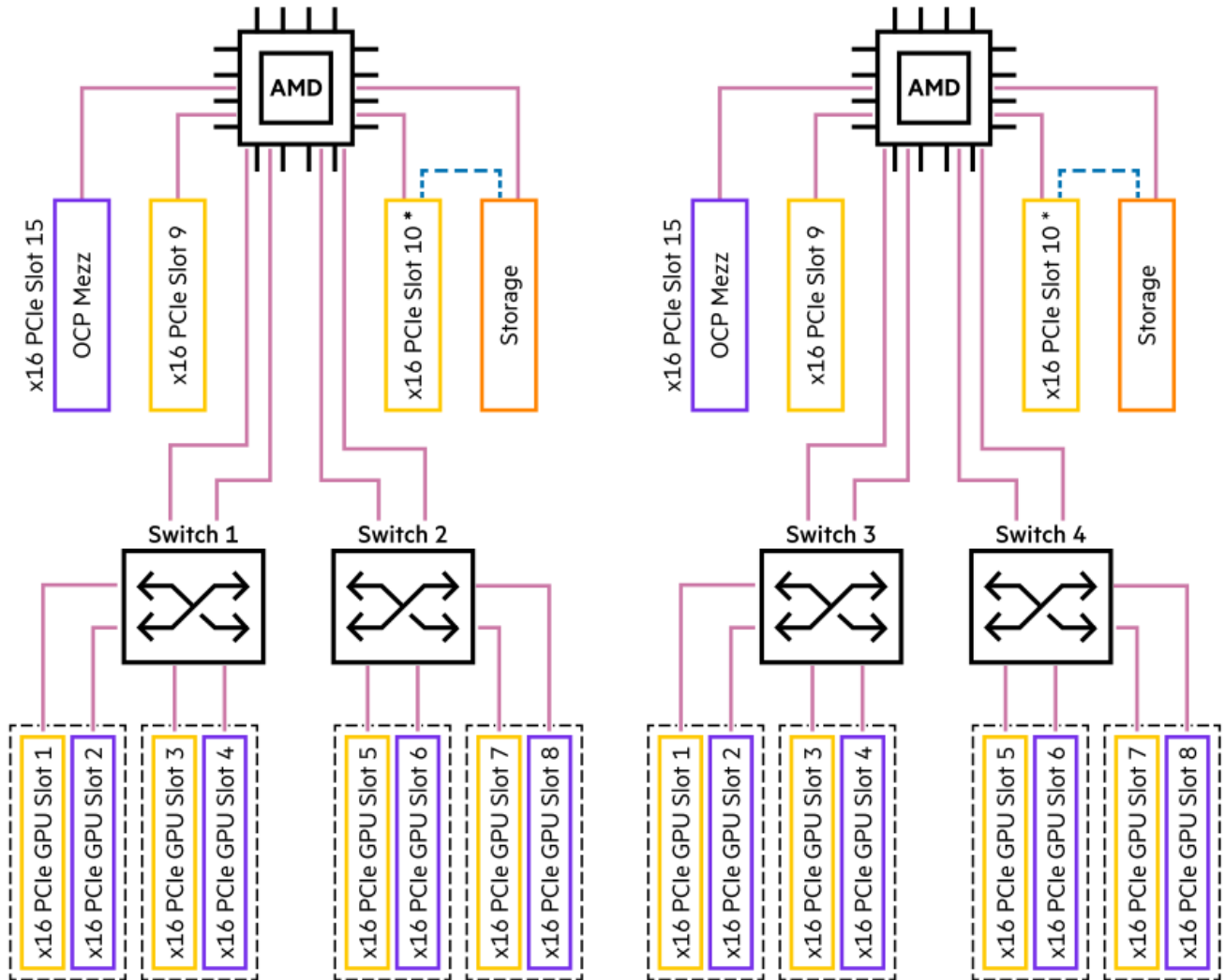


Notes: For the highest reliability and best customer experience, HPE must install the NVLink GPU in the factory. Field installations and upgrades of NVLink GPU are no longer supported.

HPE ProLiant XL645d System Block Diagrams - PCIe GPU Configuration



Optional Features

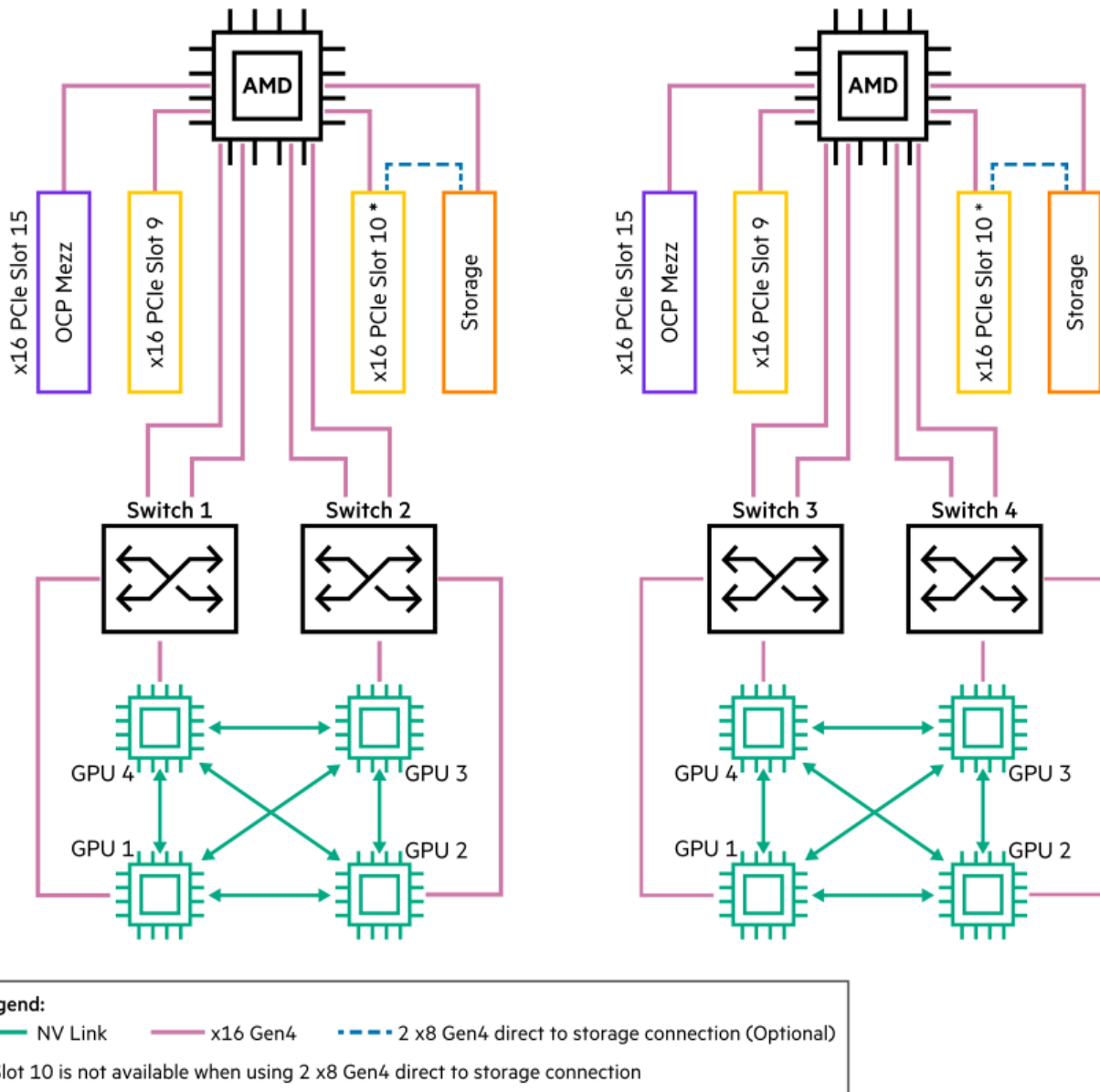


Legend:
 — x16 Gen4 - - - 2 x8 Gen4 direct to storage connection (Optional)
 * Slot 10 is not available when using 2 x8 Gen4 direct to storage connection

HPE ProLiant XL645d System Block Diagrams – Modular SXM GPU Configuration



Optional Features



Embedded SATA

Embedded AHCI controller for SATA

Notes:

- 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/>
- AHCI mode is default settings

Storage Controllers

The Gen10/Gen10 Plus controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10/Gen10 Plus Smart Array controllers visit the **HPE Server Storage** website.



Optional Features

Performance RAID Controller

A performance array is recommended for the Apollo 6500 Gen10

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

Available for
XL675d XL645d

Notes: Performance RAID Controllers require the HPE Smart Storage Battery (782961-B21) which is sold separately.

Essential RAID Controller

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	✓	
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	✓	✓
HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller		✓

HPE NS204i-t x2 Lanes NVMe PCIe3 x8 OS Boot Controller – XL645d

HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device – XL675d

The HPE NS204i-p OS Boot Device is an economical PCIe add-in card that enables dedicated RAID1 operating system mirroring on the two included 480GB M.2 NVMe SSDs. It presents itself to the system as a single directly-connected NVMe drive (not a RAID controller) and it is “plug-and-play,” with no need for device configuration or management.

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	✓	
HPE StoreFabric SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter	✓	✓
HPE StoreFabric SN1610E 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 SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	✓	✓
HPE StoreFabric SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	✓	✓

Available for
XL675d XL645d

Notes: 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>

Optional Features

HPE ProLiant XL675d Storage Controller Cable Kits				
HPE Storage Configuration	Main Cable Kit	Addt. Cable Kit	Main Backplane	Addt. Backplane
8 Embedded SATA	P31480-B21		P25877-B21	
8 Embedded SATA + Up to 6 NVMe - Switch Direct Attached	P31480-B21	P31491-B21	P25877-B21	P25879-B21
8 SAS/SATA (AROC)	P27764-B21		P25877-B21	
8 SAS/SATA (AROC) + Up to 6 NVMe - Switch Direct Attached	P27764-B21	P31491-B21	P25877-B21	P25879-B21
16 SAS/SATA (AROC)	P31490-B21		P25877-B21	P25877-B21
6 NVMe – Switch Direct Attached	P31491-B21		P25879-B21	
2 embedded SATA + 6 SW Direct NVMe	P39951-B21		P25879-B21	
2 AROC SAS/SATA + 6 SW Direct NVMe	P39952-B21		P25879-B21	

HPE Apollo 6500 Gen10 Plus XL675d

- HPE XL675d Gen10 Plus 8SFF Smart Array SAS Cable Kit
- HPE XL675d Gen10 Plus 8SFF Smart Array SR100i SATA Cable Kit
- HPE XL675d Gen10 Plus 16SFF Smart Array SAS Cable Kit
- HPE XL675d Gen10 Plus 6SFF Switch Connected x4 NVMe Cable Kit
- HPE XL675d Gen10 Plus 2SFF Embedded SATA and 6SFF Switch Connected x4 NVMe Cable Kit
- HPE XL675d Gen10 Plus 2SFF Smart Array SAS and 6SFF Switch Connected x4 NVMe Cable Kit

HPE ProLiant XL645d Storage Controller Cable Kits					
HPE Storage Configuration	Cable Kit	Enablement Card	Backplane	Cable Kit	Enablement Card
8 Embedded SATA	P31487-B21		P25877-B21		
8 SAS/SATA (Smart Array)	P31488-B21	HPE Smart Array	P25877-B21		
2 Embedded SATA + 2 x4 NVMe	P31483-B21		P25879-B21		
2 SAS/SATA (Smart Array) + 2 x4 NVMe	P31486-B21		P25879-B21		
No SFF Drives + NS204i-† M.2 Boot Device				P31481-B21	P20292-B21
8 Embedded SATA + NS204i-† M.2 Boot Device	P31487-B21		P25877-B21	P31481-B21	P20292-B21
8 SAS/SATA (Smart Array) + NS204i-† M.2 Boot Device	P31488-B21	HPE Smart Array	P25877-B21	P31481-B21	P20292-B21

HPE Apollo 6500 Gen10 Plus XL645d

- HPE XL645d Gen10 Plus 2SFF Smart Array SR100i SATA and 2SFF CPU Connected x4 NVMe Cable Kit
- HPE XL645d Gen10 Plus 2SFF Smart Array SAS and 2SFF CPU Connected x4 NVMe Cable Kit
- HPE XL645d Gen10 Plus 8SFF Embedded SATA Controller Cable Kit
- HPE XL645d Gen10 Plus 8SFF Smart Array SAS Cable Kit
- HPE XL645d Gen10 Plus M.2 Cable Kit



Optional Features

Internal Storage Devices

One of the following depending on model

Hard Drives

- None ship standard:
Up to 16 SFF or 6 NVMe in the XL675d
Up to 8 SFF or 3 NVMe in the XL645d

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

Maximum Internal Storage

Configuration with Capacity

Drives	XL675d	XL645d
Hot Plug SFF SATA HDD	16 x 2 TB = 32 TB	8 x 2 TB = 16 TB
Hot Plug SFF SAS HDD	16 x 2 TB = 32 TB	8 x 2 TB = 16 TB
Hot Plug SFF NVMe PCIe SSD	6 x 15.36 TB = 92.16 TB	3 x 15.36 TB = 46.08 TB
Hot Plug SFF SATA SSD	16 x 7.68 TB = 122.88 TB	8 x 7.68 TB = 61.44 TB
Hot Plug SFF SAS SSD	16 x 15.3 TB = 244.8 TB	8 x 15.3 TB = 122.4 TB

Power Supply Kits

HPE Apollo 6500 Gen10 Plus Modular Accelerator Platinum Hot Plug N Power Supply Kit

- Contains (1) HPE 3000W 12v 200-277VAC Platinum Hot Plug Power Supply & (2) HPE 3000W 54V Output 200-277VAC Platinum Hot Plug Power Supply
- Single kit supports N+0 Power Redundancy. Two kits support N+N Power Redundancy for Modular GPU such as HGX™ A100

HPE Apollo 6500 Gen10 Plus PCIe Accelerator Platinum Hot Plug N Power Supply Kit

- Contains (2) HPE 3000W 12v 200-277VAC Platinum Hot Plug Power Supply
- Single kit supports N+0 Power Redundancy. Two kits support N+N Power Redundancy for all supported PCIe GPUs

Notes:

- 80 Plus Platinum efficiency.
- One power cord required per power supply.

Interfaces

VGA	1
HPE iLO Remote Management Network Port	1 Gb Dedicated
USB 3.0	1 rear panel stacked dual port, 2 internal vertical 3.0

Optional Features

Operating Systems and Virtualization Software Support for ProLiant Servers

- Windows Server 2016 (Most Recent Version)
- Windows Server 2019 (Most Recent Version)
- VMware ESXi 7.0 U1
- SUSE Linux Enterprise Server (SLES) 12 SP5 (64 bit)
- SUSE Linux Enterprise Server (SLES) 15 SP1 (64 bit)
- Red Hat Enterprise Linux (RHEL) (64 bit)
- Ubuntu 20.04 LTS

Notes: 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://www.hpe.com/us/en/servers/server-operating-systems.html>

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 4.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA / Display Port
- USB 3.1 Gen1 Compliant (internal)
- USB 2.0 Compliant (external ports)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API
- IPMI 2.0
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- Active Directory v1.0
- UEFI (Unified Extensible Firmware Interface Forum)
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- European Union (EU) eco-design regulations for server and storage products, known as Lot 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen10 servers are compliant with Lot9 requirements. For more information regarding HPE Lot 9 conformance, please visit: <https://www.hpe.com/us/en/about/environment/msds-specs-more.html>
- ASHRAE A2

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



Optional Features

HPE Server UEFI

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 Apollo 6500 Gen10 Plus servers have a UEFI Class 2 implementation and supports UEFI Mode only.

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
- Workload Profiles for simple performance optimization

UEFI Boot Mode only:

- Firmware TPM
- 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

UEFI (Unified Extensible Firmware Interface Forum)

UEFI is the default for the Apollo 6500 Gen10 Plus. Legacy mode will not be supported.

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

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

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>



Optional Features

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>
des remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications.

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>

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>

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.

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. <http://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:



Optional 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
- Secure erase of NAND/User data
- TPM (Trusted Platform Module) 2.0 option
- Bezel Locking Kit option

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.

Notes: 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.hp.com/us/en/enterprise/servers/warranty/>

Accelerator and GPU 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.



Optional Features

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

Achieve maximum return from your IT investment

Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and costs using proven best practices, automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. With **Advisory Services**, we 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.

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 customers to address the pressing needs of IT today and smoothly transform to a more agile cloud-like IT operations model. We help run and monitor your IT by offloading the day to day routine tasks, helping customers be more predictive and proactive, and saving time with one place to call with for all of their IT. Datacenter Care is available as both tailored statement of work and as a packaged service for 3, 4, and 5 year terms. Partner with an assigned account team backed by local and global experts, access HPE enhanced call experience with priority access, use specialized support for complex, technologies, choose hardware and software support for your devices, implement proactive monitoring to stay ahead of issues, and access HPE IT best practices and IP.

HPE Datacenter Care advantage options are available to add to your agreement to give you specialized expertise for performance, security, back up analysis, and much more. <https://www.hpe.com/us/en/services/datacenter-hybrid-services.html>

HPE Proactive Care

Gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. HPE Proactive Care is available in 3, 4 and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR). This Service combines both reactive support when there is a problem with an enhanced call experience and start to finish case management with proactive reporting and advice. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.).

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Notes: HPE Proactive Care 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://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw>

HPE Green Lake

With HPE Green Lake, 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.

NGC Support Services

HPE offers NVIDIA NGC Support Services providing enterprise-grade support to ensure that your NGC-Ready HPE servers run optimally, maximizing system utilization and user productivity. Direct access to NVIDIA subject matter experts means you can quickly address software issues, minimize downtime and capitalize on ROI. NGC provides a catalog for GPU-optimized software for deep learning (DL), machine learning (ML), and high performance computing (HPC) that accelerates deployment to development workflows so data scientists, developers, and researchers can focus on building solutions, gathering insights, and delivering business value. Visit the [HPE NGC Support QuickSpec](#) for more information.

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.

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

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.

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

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 [here](#).



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

Notes:

- Mixing of 2 different processor models is NOT allowed.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
- For more information regarding AMD 2nd Gen EPYC™ Series Processor visit:
<https://www.amd.com/en/products/epyc-server>
- All AMD 2nd Gen EPYC™ Series Processors can support up to 2TB of memory each on the Apollo 6500 Gen10 Plus system, depending on the chosen DIMMs.
- Certain limitations may apply to select processors, please contact your HPE sales representatives for any questions on processor support needed

Step 1: Choose your CTO Server

HPE ProLiant XL675d Gen10 Plus Configure-to-order Server	P19725-B21
HPE ProLiant XL645d Gen10 Plus Configure-to-order Server	P19726-B21

Notes: 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. You can also opt for HPE server hardware installation.

Step 2a: HPE ProLiant XL675d GPU support

For PCIe GPU Support	HPE P/N
Select the PCIe Accelerator Backplane	
HPE Apollo 6500 Gen10 Plus PCIe Accelerator Power Backplane Kit	P25874-B21
Select the XL675d PCIe Accelerator Trays	
HPE XL675d Gen10 Plus 10 Double Wide PCIe and 16 Single Wide PCIe Accelerator Tray	P25887-B21
For AMD Instinct™ MI100 - Mixing of GPUs is not allowed.	
AMD Instinct MI100 PCIe Graphics Accelerator for HPE	R4W72A
HPE Apollo 6500 Gen10 Plus PCIe Accelerator and Bracket v2 Cable Kit	P27282-B21
Notes: Select (1) Cable Kit per GPU	
AMD Infinity Fabric 4-way 4-slot Bridge for HPE	R6B51A
Notes: Select (1) Bridge for every 4 PCIe AMD MI100 GPUs	
For NVIDIA PCIe A100 - Mixing of GPUs is not allowed.	
NVIDIA A100 40GB PCIe Computational Accelerator for HPE	R6B53A
HPE Apollo 6500 Gen10 Plus PCIe Accelerator and Bracket Cable Kit	P27285-B21
Notes: Select (1) Cable Kit per GPU	
NVIDIA Ampere 2-way 2-slot Bridge for HPE	R6V66A
Notes: Select (3) Bridges for every pair of PCIe A100 GPUs	



Additional Options

For Modular GPU Support – All Modular configurations are Factory integrated.

Select the Modular Accelerator Backplane

HPE Apollo 6500 Gen10 Plus Modular Accelerator Power Backplane Kit P25872-B21

Select the XL675d Modular Accelerator Trays

HPE XL675d Gen10 Plus Modular Accelerator Tray P25668-B21

For Air Cooled HGX™ A100

NVIDIA HGX A100 x8 GPU Air Cooled Baseboard for HPE R3V64A

Step 2b: HPE ProLiant XL645d GPU Support

For PCIe GPU Support

HPE P/N

Select the XL675d PCIe Accelerator Trays

HPE XL645d Gen10 Plus PCIe Accelerator Tray P27772-B21

For AMD Instinct™ MI100 - Mixing of GPUs is not allowed.

AMD Instinct MI100 PCIe Graphics Accelerator for HPE R4W72A

HPE Apollo 6500 Gen10 Plus PCIe Accelerator and Bracket v2 Cable Kit P27282-B21

Notes: Select (1) Cable Kit per GPU

AMD Infinity Fabric 4-way 4-slot Bridge for HPE R6B51A

Notes: Select (1) Bridge for every 4 PCIe AMD MI100 GPUs

For NVIDIA PCIe A100 - Mixing of GPUs is not allowed.

NVIDIA A100 40GB PCIe Computational Accelerator for HPE R6B53A

HPE Apollo 6500 Gen10 Plus PCIe Accelerator and Bracket Cable Kit P27285-B21

Notes: Select (1) Cable Kit per GPU

NVIDIA Ampere 2-way 2-slot Bridge for HPE R6V66A

Notes: Select (3) Bridges for every pair of PCIe A100 GPUs

For Modular GPU Support – All Modular configurations are Factory integrated.

Select the XL645d Modular Accelerator Trays

HPE XL645d Gen10 Plus Modular Accelerator Tray P27769-B21

For Air Cooled HGX™ A100

NVIDIA A100 HGX x4 GPU Air Cooled Baseboard for HPE R3V35A

HPE XL645d Gen10 Plus Modular Accelerator Power Cable Kit P31489-B21

Step 3a: Choose HPE ProLiant XL675d Processors

Must select two (2) of the following processors.

AMD EPYC 7H12 (2.6GHz 64-core 280W Processor Kit for HPE Apollo 6500 Gen10 Plus P27248-B21

AMD EPYC 7742 2.25GHz 64-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus P27249-B21

AMD EPYC 7702 2.0GHz 64-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus P27250-B21

AMD EPYC 7642 2.3GHz 48-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus P27252-B21

AMD EPYC 7552 2.2GHz 48-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus P27253-B21

AMD EPYC 7542 2.9GHz 32-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus P27254-B21

AMD EPYC 7502 2.5GHz 32-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus P27255-B21

AMD EPYC 7532 2.4GHz 32-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus P27256-B21

AMD EPYC 7452 2.35GHz 32-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus P27257-B21



Additional Options

AMD EPYC 7F72 3.2GHz 24-core 240W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27258-B21
AMD EPYC 7402 2.8GHz 24-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27259-B21
AMD EPYC 7352 2.3GHz 24-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27260-B21
AMD EPYC 7F52 3.5GHz 16-core 240W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27261-B21
AMD EPYC 7302 3.0GHz 16-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27262-B21
AMD EPYC 7F32 3.7GHz 8-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27263-B21
AMD EPYC 7262 3.2GHz 8-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27264-B21

Step 3b: Choose HPE ProLiant XL645d Processors

Must select one of the following processors for each server.

AMD EPYC 7302P 3.0GHz 16-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P29671-B21
AMD EPYC 7402P 2.8GHz 24-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus	P29672-B21
AMD EPYC 7502P 2.5GHz 32-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus	P29673-B21
AMD EPYC 7702P 2.0GHz 64-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus	P29674-B21
AMD EPYC 7H12 (2.6GHz 64-core 280W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27248-B21
AMD EPYC 7742 2.25GHz 64-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27249-B21
AMD EPYC 7662 2.0GHz 64-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27251-B21
AMD EPYC 7642 2.3GHz 48-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27252-B21
AMD EPYC 7552 2.2GHz 48-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27253-B21
AMD EPYC 7542 2.9GHz 32-core 225W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27254-B21
AMD EPYC 7532 2.4GHz 32-core 200W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27256-B21
AMD EPYC 7452 2.35GHz 32-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27257-B21
AMD EPYC 7F72 3.2GHz 24-core 240W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27258-B21
AMD EPYC 7352 2.3GHz 24-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27260-B21
AMD EPYC 7F52 3.5GHz 16-core 240W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27261-B21
AMD EPYC 7F32 3.7GHz 8-core 180W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27263-B21
AMD EPYC 7262 3.2GHz 8-core 155W Processor Kit for HPE Apollo 6500 Gen10 Plus	P27264-B21

Notes:

- Mixing of 2 different processor models is NOT allowed.
- For more information regarding AMD 2nd Gen EPYC™ Series Processor visit: <https://www.amd.com/en/products/epyc-server>
- All AMD 2nd Gen EPYC™ Series Processors can support up to 2TB of memory each on the Apollo 6500 Gen10 Plus system, depending on the chosen DIMMs.
- Certain limitations may apply to select processors, please contact your HPE sales representatives for any questions on processor support needed.



Additional Options

Step 4: Choose Memory Options

Please select two (2) or more memory kits from below.

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

<https://h20195.www2.hpe.com/v2/getdocument.aspx?docname=a00038346enw&>

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

HPE 16GB (1x16GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07640-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07642-H21
HPE 32GB (1x32GB) Dual Rank x8 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07644-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07646-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	P07650-H21
HPE 128GB (1x128GB) Quad Rank x4 DDR4-3200 CAS-22-22-22 Load Reduced Smart Memory Kit	P07652-H21
HPE 32GB (1x32GB) Single Rank x4 DDR4-3200 CAS-22-22-22 Registered Memory Kit	P38454-H21

Notes:

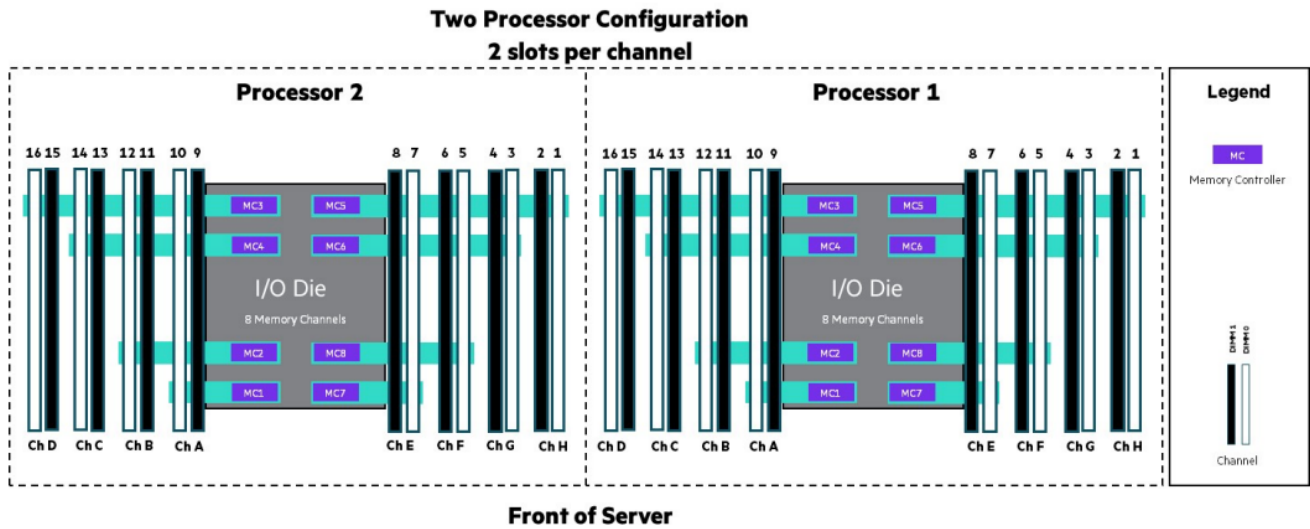
- Memory DIMM availability with a server platform is dependent upon completion of certification testing.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- Mixing of x4 and x8 memory is not allowed.
- 3200 MT/s memory SKUs offer a transfer rate of 3200 MT/s at 1 DIMM per channel and 2933 MT/s at 2 DIMMs per channel.

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.
- 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: <https://www.hpe.com/docs/amd-population-rules-Gen10plus>
- To realize the performance memory capabilities listed in this document, HPE DDR4 SmartMemory is required.
- For additional information, please see the: [HPE DDR4 Smart Memory QuickSpecs](#)
- For details on the HPE Server Memory speed, visit: <http://www.hpe.com/docs/amd-speed-tables>



Additional Options



Step 5: Choose Storage Options

Drive Cage

HPE Apollo 6500 Gen10 Plus 8SFF SAS/SATA Standard Smart Carrier Drive Backplane Kit P25877-B21

Notes: This kit provides support for up to 8 SFF SAS/SATA per Box.

HPE Apollo 6500 Gen10 Plus 8SFF NVMe/SAS/SATA U.3 Premium Smart Carrier Drive Backplane Kit P25879-B21

Notes: This kit provides support for up to 6 SFF NVMe or up to 6 SFF NVMe and 2 SFF SAS/SATA drives. Maximum of 1 Premium kit supported.



Additional Options

HPE ProLiant XL675d Smart Array Controllers

HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21
HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular Controller	804331-B21
HPE Smart Array P816i-a SR Gen10 (16 Internal Lanes/4GB Cache/SmartCache) 12G SAS Modular Controller	804338-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular Controller	804326-B21

HPE ProLiant XL645d Smart Array Controllers

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
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

Notes:

- All performance RAID controllers are supported by the HPE Smart Storage Battery (782961-B21), which supports multiple devices and is sold separately.
- Flexible Smart Array controllers do not consume a PCIe slot
- 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.

HPE ProLiant XL675d Boot Device

HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device	P12965-B21
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Notes: This boot device is a PCIe add-in card that enables dedicated RAID1 operating system mirroring on the two included 480GB M.2 NVMe SSDs.

HPE ProLiant XL645d Boot Controller

HPE NS204i-t Gen10 Plus x2 Lanes NVMe PCIe 3 x8 Boot Controller	P20292-B21
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HPE Smart Storage Battery

HPE Smart Array Controller Batteries	782961-B21
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Notes: One kit required for use with any HPE Smart Array.

HPE ProLiant XL675d Storage Cables

HPE XL675d Gen10 Plus 8SFF Smart Array SR100i SATA Cable Kit	P31480-B21
HPE XL675d Gen10 Plus 16SFF Smart Array SAS Cable Kit	P31490-B21
HPE XL675d Gen10 Plus 6SFF Switch Connected x4 NVMe Cable Kit	P31491-B21
HPE XL675d Gen10 Plus 8SFF Smart Array SAS Cable Kit	P27764-B21
HPE XL675d Gen10 Plus 2SFF Embedded SATA and 6SFF Switch Connected x4 NVMe Cable Kit	P39951-B21
HPE XL675d Gen10 Plus 2SFF Smart Array SAS and 6SFF Switch Connected x4 NVMe Cable Kit	P39952-B21

HPE ProLiant XL645d Storage Cables

HPE XL645d Gen10 Plus 2SFF Smart Array SR100i SATA and 2SFF CPU Connected x4 NVMe Cable Kit	P31483-B21
HPE XL645d Gen10 Plus 2SFF Smart Array SAS and 2SFF CPU Connected x4 NVMe Cable Kit	P31486-B21
HPE XL645d Gen10 Plus 8SFF Embedded SATA Controller Cable Kit	P31487-B21
HPE XL645d Gen10 Plus 8SFF Smart Array SAS Cable Kit	P31488-B21
HPE XL645d Gen10 Plus M.2 Cable Kit	P31481-B21

Additional Options

Notes:

- 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/>
- One kit required for use with Embedded SATA using AHCI
- One kit will support up to two drive bays

HPE Host Bus Adapters

Emulex Fibre Channel HBAs

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter	Q0L13A
HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter	Q0L14A
HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter	R2J62A
HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A
HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter *	Q0L11A
HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter *	Q0L12A

QLogic Fibre Channel HBAs

HPE SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter	P9D93A
HPE SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter	P9D94A
HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	R2E08A
HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A

Notes: * Only available for XL675d Server.

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

Select up to two (2) power supply kits below, according to configuration. Power Supply Kits cannot be mixed.

For Modular GPU Support - Air Cooled HGX™ A100 - All Modular configurations are Factory integrated.

HPE Apollo 6500 Gen10 Plus Modular Accelerator Platinum Hot Plug N Power Supply Kit	P31662-B21
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Notes: Contains (1) P24681-B21 – 12v 3000W Power Supply & (2) P25875-B21 – 54v 3000W Power Supplies. For Nonredundant power, select (1) of these kits. For Redundant power, select (2).

For PCIe GPU Support - AMD Instinct™ MI100 / NVIDIA PCIe A100

HPE Apollo 6500 Gen10 Plus PCIe Accelerator Platinum Hot Plug N Power Supply Kit	P31664-B21
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Notes: Contains (2) P24681-B21 – 12v 3000W Power Supplies. For Nonredundant power, select (1) of these kits. For Redundant power, select (2).

Power Supplies – Individual Replacements

HPE 3000W 200-277VAC Platinum Hot Plug Power Supply	P24681-B21
HPE 3000W 54V Output 200-277VAC Platinum Hot Plug Power Supply	P25875-B21

Power Cords

HPE SDG300 - C20 250V 16Amp Black 0.5m Jumper Cord	P24672-B21
HPE SDG300 - C20 250V 16Amp Black 1m Jumper Cord	P24675-B21
HPE SDG300 - C20 250V 16Amp Black 2m Jumper Cord	P24678-B21
HPE SDG23A-SDG23B 277V 0.76m Jumper Cord	P9B75A
HPE SDG23A-SDG23B 277V 2.0m Jumper Cord	P9B77A

Additional Options

Step 7: Choose additional options for Factory Integration from Core and Additional Options sections below

Hard Drive Selection

All HDD options listed are compatible on both the XL675d and XL645d servers.

Midline – 6G SATA – SFF Drives

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

Midline – 12G SAS – SFF 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

Enterprise – 12G SAS – SFF Drives

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

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

Hard Drive Blank Kits

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

Notes: Hard Drives require the selection of appropriate Drive Cage.

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>.

All SSD options listed are compatible on both the XL675d and XL645d servers, except where explicitly marked.

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

HPE 960GB SAS 12G Read Intensive SFF SC PM5 SSD P04517-H21

HPE 1.92TB SAS 12G Read Intensive SFF SC PM5 SSD P04519-H21

HPE 3.84TB SAS 12G Read Intensive SFF SC PM5 SSD P04521-H21

HPE 7.68TB SAS 12G Read Intensive SFF SC PM5 SSD P04523-H21

HPE 960GB SAS 12G Read Intensive SFF SC PM1643a SSD P19903-H21

HPE 1.92TB SAS 12G Read Intensive SFF SC PM1643a SSD P19905-H21

HPE 3.84TB SAS 12G Read Intensive SFF SC PM1643a SSD P19907-H21

HPE 7.68TB SAS 12G Read Intensive SFF SC PM1643a SSD P19909-H21

HPE 15.36TB SAS 12G Read Intensive SFF SC PM1643a SSD P19911-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 3.84TB SAS 12G Read Intensive SFF SC SS540 SSD P21143-H21

HPE 7.68TB SAS 12G Read Intensive SFF SC SS540 SSD P21145-H21

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

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

HPE 800GB SAS 12G Mixed Use SFF SC PM1645a SSD P19913-H21

HPE 1.6TB SAS 12G Mixed Use SFF SC PM1645a SSD P19915-H21

HPE 3.2TB SAS 12G Mixed Use SFF SC PM1645a SSD P19917-H21

HPE 6.4TB SAS 12G Mixed Use SFF SC PM1645a SSD P19919-H21

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



Additional Options

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 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
Mixed Use – 24G SAS – SFF – Solid State Drives	
HPE 12.8TB SAS 24G Mixed Use SFF SC PM6 SSD	P26366-H21
Write Intensive – 12G SAS – SFF – Solid State Drives	
HPE 400GB SAS 12G Write Intensive SFF SC PM5 SSD	P04541-H21
HPE 800GB SAS 12G Write Intensive SFF SC PM5 SSD	P04543-H21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM5 SSD	P04545-H21
HPE 400GB SAS 12G Write Intensive SFF SC SS540 SSD	P21125-H21
HPE 800GB SAS 12G Write Intensive SFF SC SS540 SSD	P21127-H21
Write Intensive – 24G SAS – SFF – Solid State Drives	
HPE 3.2TB SAS 24G Write Intensive SFF SC PM6 SSD	P26380-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 SE5031 SSD	P13658-H21
HPE 960GB SATA 6G Mixed Use SFF SC SE5031 SSD	P13660-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC SE5031 SSD	P13662-H21
HPE 3.84TB SATA 6G Mixed Use SFF RW SE5031 SSD	P13664-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 1.92TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18436-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18438-H21
HPE 480GB SATA 6G Mixed Use SFF SC 5300M SSD	P19947-H21
HPE 960GB SATA 6G Mixed Use SFF SC 5300M SSD	P19949-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC 5300M SSD	P19951-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC 5300M SSD	P19953-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC SM883 SSD	P21517-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 480GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06194-H21
HPE 960GB SATA 6G Read Intensive SFF SC SE4011 SSD	P06196-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06198-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC SE4011 SSD	P06200-H21
HPE 240GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18420-H21
HPE 480GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18422-H21
HPE 960GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18424-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 7.68TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18430-H21



Additional Options

HPE 240GB SATA 6G Read Intensive SFF SC 5300P SSD	P19935-H21
HPE 480GB SATA 6G Read Intensive SFF SC 5300P SSD	P19937-H21
HPE 960GB SATA 6G Read Intensive SFF SC 5300P SSD	P19939-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC 5300P SSD	P19941-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC 5300P SSD	P19943-H21
HPE 7.68TB SATA 6G Read Intensive SFF SC 5300P SSD	P19945-H21
VRO – 6G SATA – SFF – Solid State Drives	
HPE 1.92TB SATA 6G Very Read Optimized SFF SC 5210 SSD	P23487-H21
HPE 3.84TB SATA 6G Very Read Optimized SFF SC 5210 SSD	P23489-H21
HPE 7.68TB SATA 6G Very Read Optimized SFF SC 5210 SSD	P23493-H21
Read Intensive – NVMe – SFF – Solid State Drives	
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 PM1733 SSD	P16501-H21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 PM1733 SSD	P16503-H21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 PE8010 SSD	P19807-H21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 PE8010 SSD	P19811-H21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 PE8010 SSD	P19815-H21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 PE8010 SSD	P19819-H21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 CM6 SSD	P20007-H21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 CM6 SSD	P20009-H21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 CD6 SSD	P20131-H21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 CD6 SSD	P20133-H21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF SC U.3 CD6 SSD	P20135-H21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 PM1733 SSD	P26104-H21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF SC U.3 PM1733 SSD	P26109-H21
HPE 960GB NVMe Gen4 High Performance Read Intensive SFF SC U.3 PM1733 SSD	P26538-H21
Mixed Use – NVMe – SFF – Solid State Drives	
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 PM1735 SSD	P16497-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 PM1735 SSD	P16499-H21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 PE8030 SSD	P19823-H21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 PE8030 SSD	P19827-H21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SCN U.3 PE8030 SSD	P19831-H21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 PE8030 SSD	P19835-H21
HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SC U.3 CM6 SSD	P20084-H21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 CM6 SSD	P20086-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 CM6 SSD	P20088-H21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 CD6 SSD	P20195-H21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 CD6 SSD	P20197-H21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 CD6 SSD	P20199-H21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF SC U.3 CD6 SSD	P25948-H21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 PM1735 SSD	P26124-H21
HPE 12.8TB NVMe Gen4 High Performance Mixed Use SFF SC U.3 PM1735 SSD	P26129-H21
HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SC U.3 PM1735 SSD	P26543-H21



Additional Options

HPE ProLiant XL645d Exclusive Solid State Drives

HPE 3.2TB SAS 12G Mixed Use SFF SC PM5 SSD	P04537-H21
HPE 6.4TB SAS 12G Mixed Use SFF SC PM5 SSD	P04539-H21
HPE 15.3TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06592-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 960GB SATA 6G Very Read Optimized SFF SC 5210 SSD	P24190-H21

HPE ProLiant XL675d Networking

Notes: Must select a Networking card

Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P13188-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P28787-B21
HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter	P31246-H21
HPE Slingshot 200Gb 1-port PCIe Adapter for Cray System	R4K46A

HPE ProLiant XL675d InfiniBand

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-H21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-H21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter	P23665-H21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter	P23666-H21

HPE ProLiant XL645d Networking

Notes: Must select a Networking card

Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P28778-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Mellanox MCX562A-ACAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10112-B21
Mellanox MCX512F-ACHT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P13188-B21
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P28787-B21
HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter	P31246-H21
HPE Slingshot 200Gb 1-port PCIe Adapter for Cray System	R4K46A

HPE ProLiant XL645d InfiniBand

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter	P31323-H21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-H21
HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-H21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-H21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter	P23665-H21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter	P23666-H21

Notes:

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



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

Notes: Licenses ship without media.

Converged Infrastructure Management

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

Security Hardware

Trusted Platform Module

HPE Trusted Platform Module 2.0 Gen10 Plus Black Rivets Kit	P13771-B21
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Transceivers

HPE BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
HPE 25Gb SFP28 SR 100m Transceiver	845398-B21
HPE 100Gb QSFP28 MPO SR4 100m Transceiver	845966-B21

Notes: Transceivers only available on the HPE ProLiant XL675d.

Management Hardware

HPE Apollo Platform Manager Kit	741192-B21
HPE DL38X Gen10 Plus Rear Serial Cable Kit	P14606-B21
HPE s6500 Chassis Handles Kit	608477-B21

HPE Rack Options

To learn more information on additional rack options and specifications, please visit the following links:

- [HPE Advanced Series Racks QuickSpecs](#)
- [HPE Enterprise Series Racks QuickSpecs](#)
- [HPE Standard Series Racks QuickSpecs](#)
- [HPE KVM Switches web page](#)

HPE Power Distribution Units (PDUs)

To learn more information on these products and their specifications, please visit the following links

- [HPE Basic Power Distribution Units \(PDU\) QuickSpecs](#)
- [HPE Metered Power Distribution Units \(PDU\) QuickSpecs](#)
- [HPE Intelligent Power Distribution Unit \(PDU\) QuickSpecs](#)
- [HPE Metered and Switched Power Distribution Units \(PDU\) QuickSpecs](#)



Additional Options

HPE Uninterruptible Power Systems (UPS)

To learn more information on these products and their specifications, please visit the following links

- [HPE Uninterruptible Power Systems \(UPS\) web page](#)
 - [Rackmount Power Distribution Units \(PDU\) QuickSpecs](#)
 - [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#)
 - [HPE Line Interactive Single Phase UPS QuickSpecs](#)
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Technical Specifications

System Unit Specifications					
All in HPE Apollo d6500 Gen10 Plus Chassis (P19674-B21)					
Dimensions	Height	265mm (10.43 in.)			
	Depth	850mm (33.46 in.)			
	Width	439mm (17.28 in.)			
Boxed including single pallet	Height	1181mm (46.5 in.)			
	Depth	700mm (27.5 in.)			
	Width	600mm (23.6 in.)			
Maximum System Weight	XL675d: 96.27 kg (212.24 lbs)				
	XL645d: 98.4 kg (217.0 lbs)				
	# Servers in Chassis	GPU Type	GPU Qty per Server	Total GPU in Chassis	Chassis + Servers Weight
XL675d	1	V100 32GB	10	10	87.3 kg (192.5 lbs)
	1	V100 32GB	8	8	85.4 kg (188.2 lbs)
	1	HGX A100 x8	1	1	94.1 kg (207.5 lbs)

Input Requirements (per power supply)	Rated Line Voltage 200 to 277 VAC
Power Supply Output (per power supply)	Rated Steady-State Power For 3000W 12V Power Supply: <ul style="list-style-type: none"> 2900W @ 200 VAC input 3000W @ 208 VAC to 277 VAC input
	For 3000W 54V Power Supply: <ul style="list-style-type: none"> 3000W @ 200 VAC to 277 VAC input
BTU Rating	Maximum For 3000W 12V Power Supply: <ul style="list-style-type: none"> 10,671 BTU/hr @ 200 VAC 10,951 BTU/hr @ 277 VAC
	For 3000W 54V Power Supply: <ul style="list-style-type: none"> 10,918 BTU/hr @ 200 VAC 10,820 BTU/hr @ 277 VAC

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).



Technical Specifications

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).

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).

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).

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.

		Entry	Base	Perf
LpAm	Idle	32 dBA	34 dBA	44 dBA
	Operating	32 dBA	37 dBA	48 dBA
LWAd	Idle	5.0 B	5.2 B	5.7 B
	Operating	5.0 B	5.3 B	6.4 B

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.
- Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.
- The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.



Technical Specifications

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:

https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072

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
01-Feb-2021	Version 2	Changed	Overview, Standard Features, Configuration Information, Additional Options and Technical Specifications sections were updated. Obsolete SKUs were removed
07-Dec-2020	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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