Have feedback on QuickSpecs? We're listening

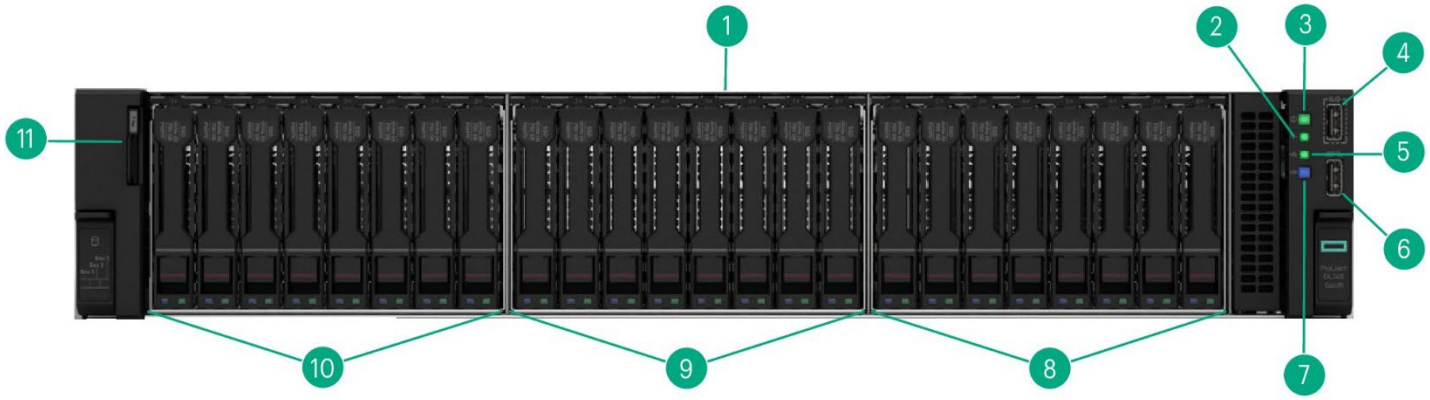
HPE ProLiant DL345 Gen11 QuickSpecs

Are you looking for a scalable single-socket server solution to power your virtualized, data-intensive, large-capacity storage workloads?

The HPE ProLiant DL345 Gen11 server is a scalable 2U 1P solution that delivers exceptional compute performance and large capacity storage options at 1P economics. Powered by 4th and 5th Generation AMD EPYC™ Processors with up to 160 cores, increased memory bandwidth (up to 3 TB), high-speed PCIe Gen5 I/O and EDSFF storage, up to 20LFF/ 34SFF/ 36EDSFF, and up to 4 GPUs at the front, this server is a superb single-socket 2U solution for your data-intensive workloads.

HPE ProLiant DL345 Gen11

Enhanced security features with the HPE silicon root of trust are built into the firmware, creating a digital fingerprint for the AMD Secure Processor to validate safe operation before boot. The HPE DL345 Gen11 server provides impressive storage performance and options for data-intensive workloads like software-defined storage, video transcoding, and virtualized apps.



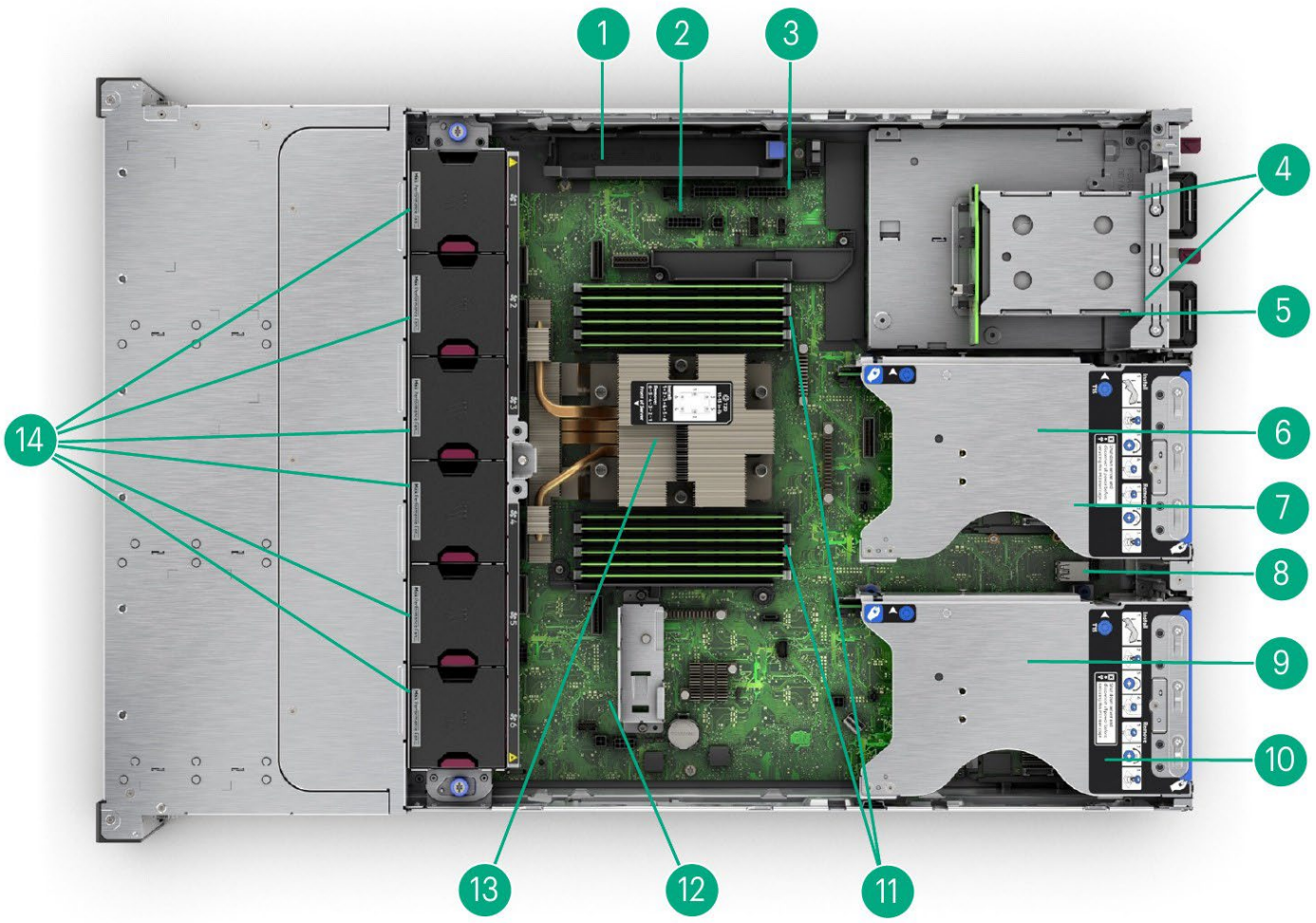
Front View - 24 SFF chassis shown

Item	Description	Item	Description
1.	Quick removal access panel	7.	Unit ID button/ LED
2.	Health LED	8.	Box 3 - 8 SFF Drive Cage Bay
3.	Power On/Standby button and system power LED	9.	Box 2 - 8 SFF Drive Cage Bay
4.	iLO service port	10.	Box 1 - 8 SFF Drive Cage Bay
5.	NIC status LED [2]	11.	Serial number pull tab[1]
6.	USB 3.2 Gen1 Port		

Notes:

– [1]Optional: Universal Media Bay

– [2]Front NIC LED display doesn't support NIC LED ACT/LINK indication from PCIE NICs

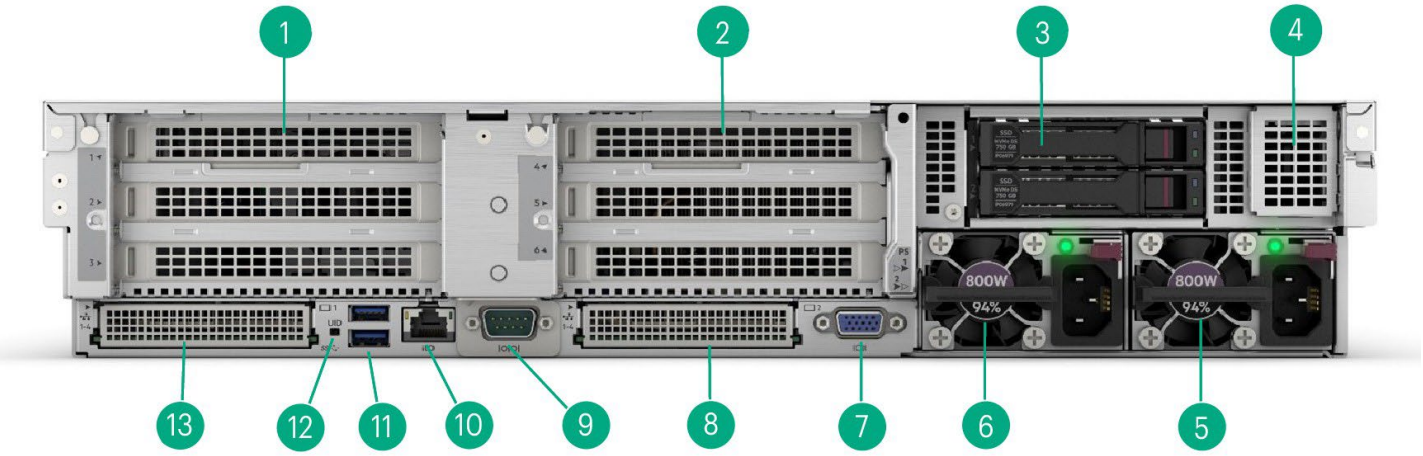


Internal View – 2SFF rear cage shown

Item	Description	Item	Description
1.	Megacell Battery holder	8.	Internal Dual USB 3.2 Gen1 port
2.	Hard drive backplane power connectors	9.	Primary PCIe 5.0 risers, slot 1,2,3
3.	Chassis intrusion detection connector	10.	OCP 3.0 Slot 21 (Under)
4.	Up to 2 Hot Plug redundant HPE Flexible Slot Power supplies (Under)	11.	DDR5 DIMM slots[1]
5.	Rear 2 SFF Cage Bay (Optional)	12	FHFL PCIe card holder
6.	Secondary PCIe 5.0 risers, slot 4,5,6	13.	Up to 1 Processor shown with performance heat sink[2]
7.	OCP 3.0 Slot 22 (Under)	14	Hot-plug fans[3,]

Notes:

- [1]Fully populated 12 DIMMs shown
- [2]Optional: standard Heat Sink
- [3]6 single-rotor standard fans shown. Optional: Performance Fans



Rear View - 2SFF rear cage shown

Item	Description	Item	Description
1.	Primary PCIe 5.0 Riser[1]	8.	OCP 3.0 slot 22
2.	Secondary PCIe 5.0 Riser[2]	9.	Optional Serial port
3.	Optional Rear Drive Cage (2SFF SAS/SATA/NVMe)	10.	Dedicated iLO management port
4.	Optional NS204i-u hot-plug NVMe boot device	11.	2 USB 3.2 Gen1 port
5	Hot-plug Power Supply 1	12.	Unit ID LED
6.	Hot-plug Power Supply 2 (Optional)	13.	OCP 3.0 slot 21
7.	Video (VGA) port		

Notes:

– [1]PCIe Slots 1,2,3 top to bottom.

– [2]PCIe Slots 4,5,6 top to bottom.

What's New:

- All new DL345 Gen11
- New 4th and 5th Generation AMD EPYC™ Processors, up to 160 cores, 400W, and 1150MB of L3 Cache.
- New DDR5 Smart Memory – up to 6400MT/s.
- New PCIe Gen5 support.
- New HPE Integrated Lights-Out 6 (iLO 6) server management software.
- New hot-pluggable NS204i-u Boot Device.
- New 4 LFF / 8 SFF Midtray and 4 LFF rear drive bay.
- New 36 EDSFF E3.S 1T drive bay.
- New GPU support, up to four single-width or two double-width GPUs.
- OpenBMC Capable through iLO6 Transfer of Ownership Process

Platform Information

Form Factor

- 2U rack

Chassis Types

- 8 SFF with optional 16 SFF front bay, 8 SFF mid tray, and 2 SFF rear to a total of 34 SFF drives.
- 24 SFF with optional 8 SFF mid tray, and 2 SFF rear to total 34 SFF drives.
- 8 LFF with optional 4 LFF front bay, 4LFF mid tray, and 4LFF rear to a total of 20 LFF drives.
- EDSFF E3.S 1T drive bay.
- 4 single-width or 2 double-width GPUs with 12 EDSFF or 8 SFF drive bay.

System Fans

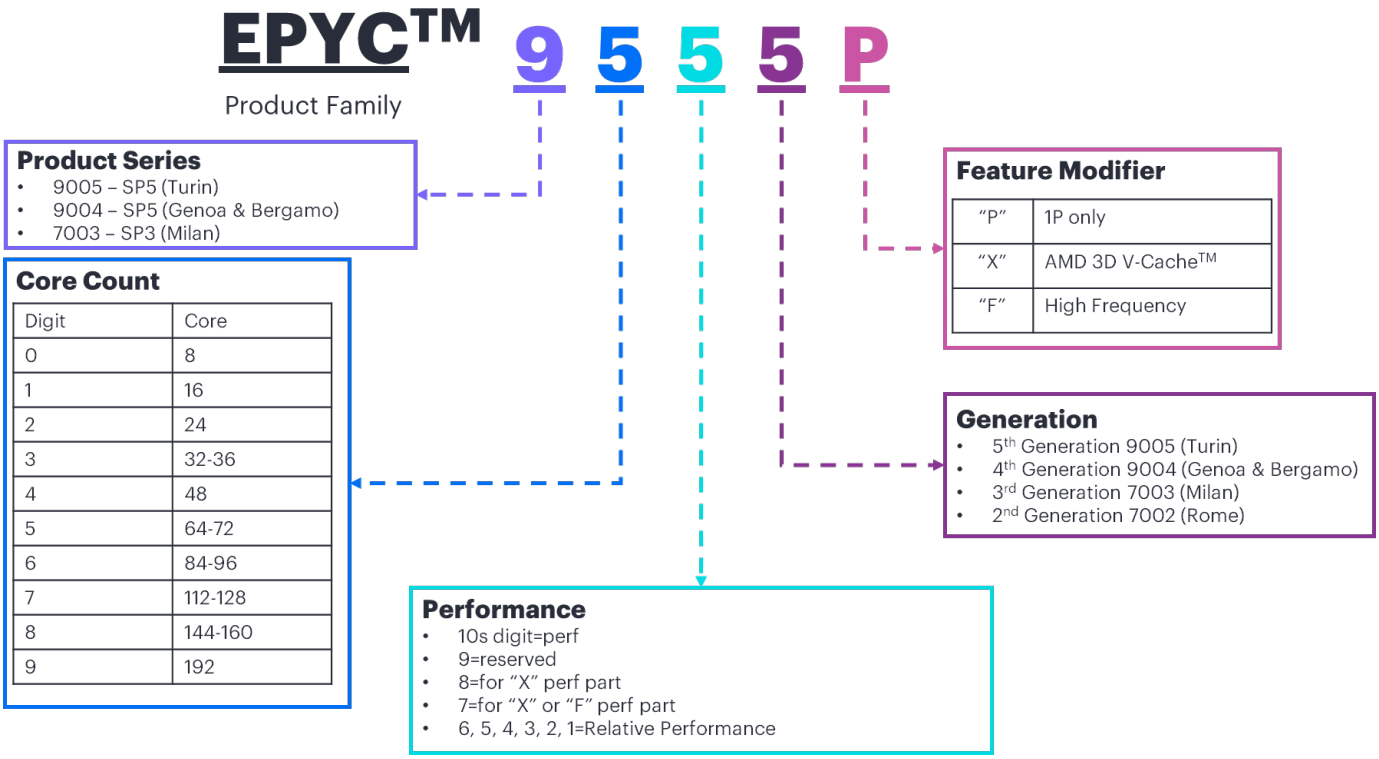
- Choice of Standard Fan Kit and Performance Fan kit

Notes:

- The HPE DL345 Gen11 supports up to 6 fans with fan redundancy built in. One fan rotor failure will place the server in degraded mode but fully functional. Two fan rotor failures could provide a warning and imminent server shutdown.
- Each Fan kit is designated to operate under different configurations. For more information, please refer to the Cooling option message in the Unique option section.

Processors – One of the following depending on the model.

Notes: For more information regarding AMD EPYC processors, please see the following:
https://www.amd.com/en/processors/epyc-9004-series



5th Gen AMD EPYC Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage	L3 Cache (MB)	Memory
EPYC 9845	160	2.1 GHz	3.7 GHz	3 TB	390	320	6400 MT/s
EPYC 9825	144	2.2 GHz	3.7 GHz	3 TB	390	384	6400 MT/s
EPYC 9745	128	2.4 GHz	3.7 GHz	3 TB	400	256	6400 MT/s
EPYC 9645	96	2.3 GHz	3.7 GHz	3 TB	320	256	6400 MT/s
EPYC 9655P	96	2.6 GHz	4.5 GHz	3 TB	400	384	6400 MT/s
EPYC 9565	72	3.15 GHz	4.3 GHz	3 TB	400	384	6400 MT/s
EPYC 9535	64	2.4 GHz	4.3 GHz	3 TB	300	256	6400 MT/s
EPYC 9575F	64	3.3 GHz	5 GHz	3 TB	400	256	6400 MT/s
EPYC 9555P	64	3.2 GHz	4.4 GHz	3 TB	360	256	6400 MT/s
EPYC 9475F	48	3.65 GHz	4.8 GHz	3 TB	400	256	6400 MT/s
EPYC 9455P	48	3.15 GHz	4.4 GHz	3 TB	300	256	6400 MT/s
EPYC 9365	36	3.4 GHz	4.3 GHz	3 TB	300	192	6400 MT/s
EPYC 9335	32	3 GHz	4.4 GHz	3 TB	210	128	6400 MT/s
EPYC 9375F	32	3.8 GHz	4.8 GHz	3 TB	320	256	6400 MT/s
EPYC 9355P	32	3.55 GHz	4.4 GHz	3 TB	280	256	6400 MT/s
EPYC 9255	24	3.25 GHz	4.3 GHz	3 TB	200	128	6400 MT/s
EPYC 9275F	24	4.1 GHz	4.8 GHz	3 TB	320	256	6400 MT/s
EPYC 9135	16	3.65 GHz	4.3 GHz	3 TB	200	64	6400 MT/s
EPYC 9115	16	2.6 GHz	4.1 GHz	3 TB	125	64	6400 MT/s
EPYC 9175F	16	4.2 GHz	5 GHz	3 TB	320	512	6400 MT/s
EPYC 9015	8	3.6 GHz	4.1 GHz	3 TB	125	64	6400 MT/s

4th Gen AMD EPYC Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage	Cache	Memory
EPYC 9754	128	2.25 GHz	3.1 GHz	3TB	360	256	4800MT/s
EPYC 9734	112	2.2 GHz	3.0 GHz	3TB	340	256	4800MT/s
EPYC 9654P	96	2.4 GHz	3.7 GHz	3TB	360	384	4800MT/s
EPYC 9684X	96	2.55 GHz	3.7 GHz	3TB	400	1150	4800MT/s
EPYC 9634	84	2.25 GHz	3.7 GHz	3TB	290	384	4800MT/s
EPYC 9554P	64	3.1 GHz	3.75 GHz	3TB	360	256	4800MT/s
EPYC 9534	64	2.45 GHz	3.7 GHz	3TB	280	256	4800MT/s
EPYC 9454P	48	2.75 GHz	3.8 GHz	3TB	290	256	4800MT/s
EPYC 9474F	48	3.6 GHz	4.1 GHz	3TB	360	256	4800MT/s
EPYC 9354P	32	3.25 GHz	3.8 GHz	3TB	280	256	4800MT/s
EPYC 9334	32	2.7 GHz	3.9 GHz	3TB	210	128	4800MT/s
EPYC 9374F	32	3.85 GHz	4.3 GHz	3TB	320	256	4800MT/s
EPYC 9384X	32	3.1 GHz	3.9 GHz	3TB	320	768	4800MT/s
EPYC 9254	24	2.9 GHz	4.15 GHz	3TB	200	128	4800MT/s
EPYC 9224	24	2.5 GHz	3.7 GHz	3TB	200	64	4800MT/s
EPYC 9274F	24	4.05 GHz	4.3 GHz	3TB	320	256	4800MT/s
EPYC 9124	16	3 GHz	3.7 GHz	3TB	200	64	4800MT/s
EPYC 9174F	16	4.1 GHz	4.4 GHz	3TB	320	256	4800MT/s
EPYC 9184X	16	3.55 GHz	4.2 GHz	3TB	320	768	4800MT/s

Notes:
- 6096pin LGA SP5 socket type, 128 PCIe 5.0 Lanes per processor.
- All 4th and 5th generation AMD EPYC processors can support up to 3TB of memory each under 1DPC, 12 channels per processor.
- The wattage information indicates the processor's default cTDP (Configurable TDP).

Chipset

No chipset – System on Chip (SoC) design.

On System Management Chipset

HPE iLO 6 ASIC

Notes: Read and learn more in the iLO QuickSpecs

Memory	
Type	HPE DDR5 Smart Memory Registered (RDIMM)
DIMM Slots Available	12 12 DIMM slots per processor, 12 channels per processor, 1 DIMM per channel
Maximum capacity (RDIMM)	3.0 TB 12 x 256 GB RDIMM @ 4800 MT/s at 1DPC for 4th Gen EPYC Processors 12 x 256 GB RDIMM @ 6400 MT/s at 1DPC for 5th Gen EPYC Processors

Notes:
- All processors support up to 3TB of memory per server.
- LRDIMM and Persistent Memory are not supported.
- For additional information, please see the HPE DDR5 Smart Memory QuickSpecs.
- For the Memory Population Rules and Guidelines with AMD EPYC 9004/5 series processors, see details here: https://www.hpe.com/psnow/doc/a50007481enw

Memory Protection

Advanced ECC

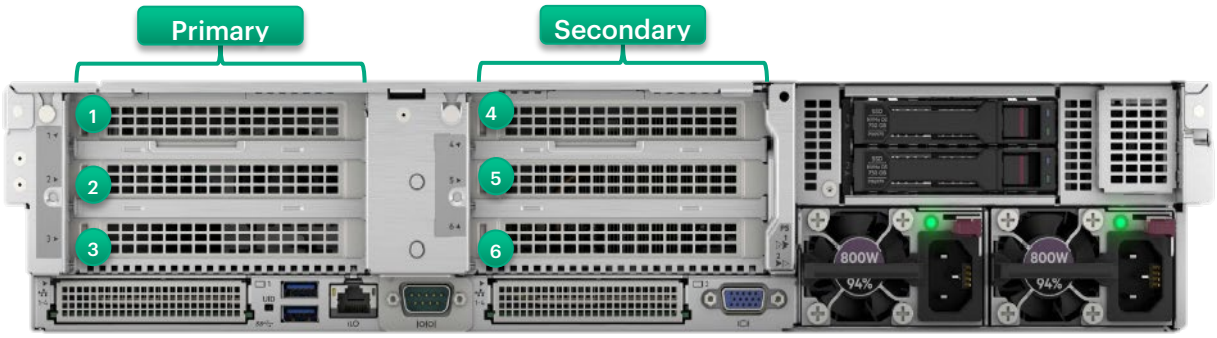
Advanced ECC uses single-device data correction to detect and correct single and all multibit errors that occur within a single DRAM chip.

Online Spare

Memory online spare mode detects a rank that is degrading and switches operation to the spare rank.

Notes: For more information see our Memory RAS feature technical whitepaper.

Expansion Slots



Default Two (2) PCIe Slots

Primary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
3 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Secondary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
6 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Optional Four (4) Slots

Primary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
1 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
2 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
3 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Secondary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
6 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Notes:

- Requires 4PCIe enablement kit (P57116-B21) to support four (4) slots.
- When supporting Slot1 & OCP Slot22 scenario, Slot1 & OCP Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot2 & Slot3 scenario, Slot2 & Slot3 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.

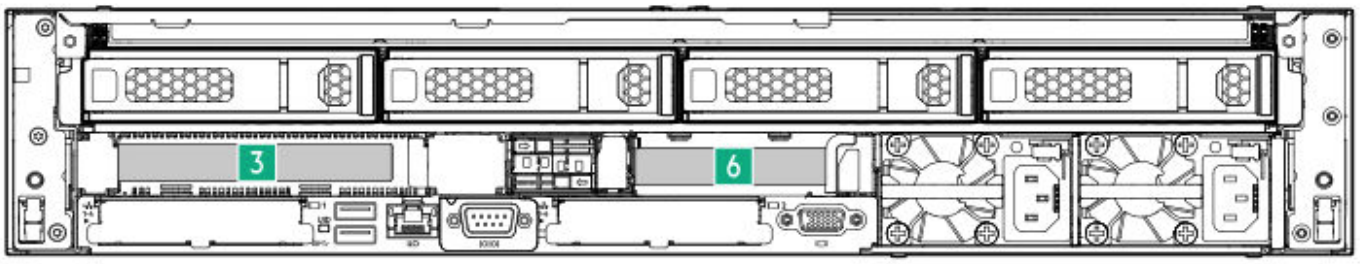
Optional Six (6) slots

Primary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
1 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
2 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
3 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Secondary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
4 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
5 (via Option Kit)	PCIe 5.0	X16	X16	Full-height, Half-length slot
6 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Notes:

- Requires 6PCIe enablement kit (P57117-B21) to support six (6) PCIe slots
- When supporting Slot1 & Slot21 scenario, Slot1 & OCP Slot21 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot2 & Slot3 scenario, Slot2 & Slot3 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot4 & Slot22 scenario, Slot4 & OCP Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot5 & Slot6 scenario, Slot5 & Slot6 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.

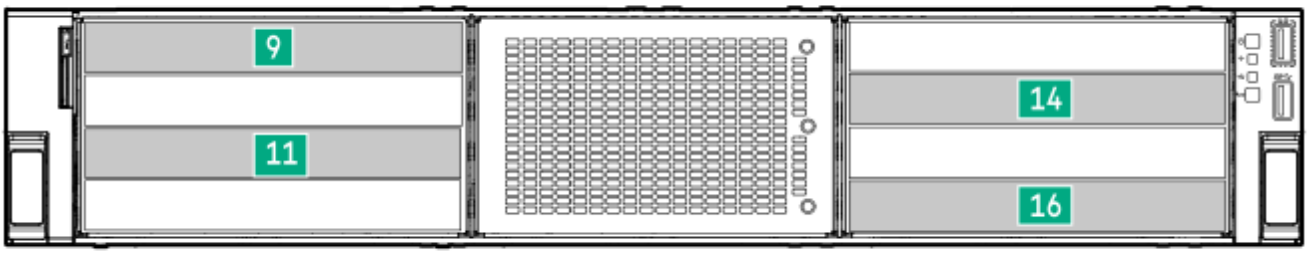


2 slots with 4 LFF rear drives

Primary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
3 (Default)	PCIe 5.0	X16	X16	Full-height, Half-length slot

Secondary Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
6 (Option)	PCIe 5.0	X16	X16	Low Profile or Full-height, half-length slot

Notes: If the 4LFF rear drive bay is selected, then two (2) Primary riser kits (P55098-B21) OR a Primary riser kit (P55098-B21), a Low profile riser kit (P59260-B21), and an NS204i-u boot device (P48183-B21) must be selected.



Front risers of GPU CTO server

Front Riser				
Slots #	**Technology**	**Bus Width**	**Connector Width**	**Slot Form Factor**
9	PCIe 5.0	X16	X16	Full-height, Full-length slot
11	PCIe 5.0	X16	X16	Full-height, Full-length slot
14	PCIe 5.0	X16	X16	Full-height, Full-length slot
16	PCIe 5.0	X16	X16	Full-height, Full-length slot

Notes:

- Requires 2GPU front enablement kit (P55068-B21) to support two (2) PCIe slots at the front of GPU CTO server.
- Requires 4GPU front enablement kit (P55067-B21) to support four (4) PCIe slots at the front of GPU CTO server.
- When supporting Slot9 & OCP Slot22 scenario, Slot9 & OCP Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot16 & OCP Slot21 scenario, Slot16 & OCP Slot21 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- The extension slots at the front of the GPU CTO server do not support external cabling.

Storage Controllers

Boot Device

- HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device

Notes:

- Includes Hot Plug capable dual 480GB NVMe M.2 automatically configured into a RAID 1 Mirror
- Externally accessible but does not occupy a PCIe slot
- Requires specific cable kit along with specific cooling selections based on configuration

Essential RAID Controller

- HPE Smart Array E208e-p SR Gen10 Controller

MR Gen11 Storage Controller

- HPE MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller
- HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller
- HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller
- HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller
- HPE MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller

SR Gen11 Storage Controller

- HPE SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage

Notes: For additional details, please visit:
HPE Compute MR Gen11 Controllers QuickSpecs
HPE Compute SR Gen11 Controllers QuickSpecs

Internal Storage Devices

Optical Drive

- Available on 8SFF and 8LFF CTO Servers as an option (DVD-ROM or DVD-RW)

Drives

- None are shipped as standard

Maximum Internal Storage		
	Capacity	**Configuration**
Hot Plug LFF SAS HDD	480 TB	20 x 24 TB
Hot Plug LFF SATA HDD	480 TB	20 x 24 TB
Hot Plug SFF SAS SSD	261.12 TB	34 x 7.68 TB
Hot Plug SFF SATA SSD	261.12 TB	34 x 7.68 TB
Hot Plug SFF NVMe PCIe U.3 SSD	522.24 TB	34 x 15.36 TB
Hot Plug EDSFF E3.S 1T NVMe SSD	552.96 TB	36 x 15.36 TB

Interfaces	
Serial	1 optional port - rear
Video Port	1 standard VGA Port - rear
Network Ports	None. Choice of OCP or stand-up card, supporting a wide array of NIC adapters BTO models will come pre-selected with a primary networking card.
HPE iLO Remote Mgmt Port	1 1 Gb Dedicated - rear
Front iLO Service Port	1 standard
USB 3.2 Gen1	5 standard on all models: 1 front, 2 rear, 2 internal

Graphics

Integrated Video Standard

- Video modes up to 1920 x 1200@60Hz (32 bpp)
- 16MB Video Memory

HPE iLO 6 on system management memory

- 64 MB Flash
- 8 Gbit DDR 4 with ECC protection

Power Supply

- HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 94% power Efficiency.
- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 94% Power Efficiency.
- HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 96% Power Efficiency.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 94% Power Efficiency.
- HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit
  Notes: Available in 94% Power Efficiency. 200-240VAC power input only.
- HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, and tool-less installation into HPE ProLiant Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the ProLiant Power Cables web page.

To review the power requirements for your selected system, please use the HPE Power Advisor Tool.

For information on power specifications and technical content visit HPE Server power supplies.

Operating Systems and Virtualization Software Support for HPE Servers

HPE servers are designed for seamless integration with partner Operating Systems and Virtualization Software. By collaborating closely with our partners, we ensure that their products are optimized, certified, and fully supported within your HPE server environment.

Access the certified and supported servers for each of the OS and Virtualization software: HPE Servers Support & Certification Matrices

Notes: Minimum required version includes all future updates of the indicated release unless a maximum is listed in the Notes

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA/Display Port
- USB 3.2 Gen1 Compliant
- USB 2.0 Compliant
- Energy Star 4.0
- SMBIOS 3.1
- UEFI 2.7
- UEFI Class 3
- 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/A4

  Notes: For additional technical thermal details regarding ambient temperatures, humidity, and features support please visit: Extended Ambient Temperature Guidelines for HPE Gen11 servers
- UEFI (Unified Extensible Firmware Interface Forum)
- APML 1.0

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

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

Learn more at http://www.hpe.com/info/iLO.

UEFI

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

Intelligent Provisioning

Hassle-free server and OS provisioning for 1 or more servers with Intelligent Provisioning.
Learn more here.

iLO RESTful API

iLO RESTful API is DMTF Redfish API implementation 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.

OpenBMC Support

OpenBMC Capable through iLO6 Transfer of Ownership Process.
Learn more at OpenBMC enablement on HPE ProLiant servers | HPE

HPE Server UEFI

Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secure configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen11 servers have a UEFI Class 3 implementation.

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

- Secure Boot and Secure Start enable enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.1 Gen1 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
- Embedded TPM Support

UEFI Boot Mode only

- NVMe Boot Support
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.
- Boot support for option cards that only support a UEFI option ROM

Notes:

- For UEFI Boot Mode, boot environment and OS image installation should be configured properly to support UEFI
- TPM is embedded on DL345 Gen11 mainboard and does not require additional option kit selection to enable this function.

Server Utilities

Active Health System

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

Smart Update

Keep your servers up to date with the HPE Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP). Learn more at https://www.hpe.com/us/en/servers/smart-update.html

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, Gen10, and Gen10 Plus HPE servers. Use an iLO Advanced License to unlock full capabilities.
Learn more at http://www.hpe.com/servers/iLOamplifierpack.

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. Learn more at http://www.hpe.com/info/resttool.

Scripting Tools

Provision one to many servers using your own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at http://www.hpe.com/servers/powershell.

HPE OneView Standard

HPE OneView is an on-premises, multi-generational server monitoring, and management solution. HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. Customers can upgrade their management experience with an HPE OneView Advanced license, all provided by the same tool. Learn more at http://www.hpe.com/info/oneview

HPE Compute Ops Management

Transform compute lifecycle management with a cloud experience that delivers greater simplicity, agility, and speed across your entire server environment, wherever it lives. This software-as-a-service tool provides a dashboard with global visibility and intuitive management of server health, security and compliance status to help you easily identify areas that need immediate attention. Users can update tens to thousands of servers faster through intelligent delta-based firmware downloads and on-demand HPE iLO firmware updates.

HPE Compute Ops Management is cloud-native software that is continually updated with new services, features, patches, and firmware packs. The management application resides in GreenLake cloud (access via https://common.cloud.hpe.com) and leverages the GreenLake architecture, security, and unified operations.
For a complete list of software as-a-service subscription SKUs and more information, visit the HPE Compute Ops Management QuickSpecs: https://www.hpe.com/psnow/doc/a50004263enw

For information on supported HPE servers, the complete list can be found here:
https://www.hpe.com/info/com-supported-servers

Security

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- FIPS 140-3 validation (iLO 6 certification in progress)
- Common Criteria certification (iLO 6 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
  Notes: TPM is embedded on DL345 Gen11 mainboard and does not require additional option kit selection to enable this function.
- Bezel Locking Kit option
- Chassis Intrusion detection option

Server Management

HPE iLO Advanced

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

HPE OneView Advanced

HPE OneView Advanced offers a sophisticated level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It builds upon the base features of HPE OneView Standard and provides full-featured licenses which can be purchased for managing multiple HPE server generations. To learn more visit http://www.hpe.com/info/oneview.

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair are available for three years from the date of purchase. Support for software and initial setup is available for 90 days from the date of purchase. Enhancements to warranty services are available through HPE Services 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, and 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: https://www.hpe.com/support/ProLiantServers-Warranties

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 the 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 of 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.

One Config Simple (OCS/SCE)

OCS/SCE is a guided self-service tool to help sales and non-technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use it in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact Hewlett Packard Enterprise Customer Business Center or an Authorized Partner for assistance.
https://h22174.www2.hpe.com/SimplifiedConfig/Welcome

Service and Support

For the most up-to-date information on HPE Services, please refer to the HPE Services – Supplemental QuickSpecs, which provides a comprehensive and regularly updated overview of available services.

HPE Smart Choice purchase program

The HPE Smart Choice Purchase Program features popular fully configured products that can be quoted in minutes and shipped quickly through HPE Authorized Partners. Products are configured and tested in an HPE factory and stocked at HPE Authorized Distributors and Partners. The products arrive in a single box, making onsite integration easier and more efficient for partners and customers. Additionally, there are aggressively priced HPE Tech Care Services available only through the HPE Smart Choice program when you purchase an HPE Smart Choice product.

For HPE Smart Choice configuration and product details, please visit the Smart Choice Supplemental QuickSpecs: https://www.hpe.com/psnow/doc/a50009219enw

Pre-Configured models ship with the configurations below.

- Options can be selected from the Core or Additional options section of this QuickSpecs.
- Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will not be shipped inside the server.
- Network Choice models do not include embedded LOM.

Country Code Key

- -B21 = Worldwide
- -291 = Japan
- -421 = Europe, the Middle East and Africa

Smart Templates from HPE

HPE is releasing new Smart Template technology in the One Config Advanced (OCA) configurator. These Templates represent the CTO equivalents of the top-selling BTO configurations. They are intended to provide simple starting points to assist you in easily creating and customizing your desired Server solutions. HPE Servers that have Platform Templates, developed by HPE Product Managers, will have a separate tab in the HPE OCA configurator.

Workload Solutions Templates from HPE

The Workload Solutions Templates build on the Smart Templates technology to easily develop working configurations of the most compelling Workload Solutions. The templates complement the Reference Builds developed by HPE. Workload Solutions templates preconfigure some of the key architecture decisions and make it easier for Sellers to get started and complete a differentiated server solution for your customer's specific workload.

Mainstream SKUs

HPE launched the Mainstream SKU initiative as a market-driven approach to Demand Steering. It is a simplified portfolio of our top selling options that meet the current and future market trends. HPE has committed to providing a more predictable and faster experience for these options. Mainstream SKUs enjoy higher safety stock levels and have high fulfillment service levels than non-Mainstream SKUs. Mainstream orders are fulfilled +30% faster than non-Mainstream orders, have fewer shortages, and better recovery dates. This platform has Mainstream SKUs in the options portfolio and is eligible for an improved Mainstream experience. Mainstream SKUs are designated with a Mainstream symbol in our configurators.

Mainstream Configurations

HPE is using the new Smart Templates technology to present Mainstream configurations. All the options in a Mainstream configuration are pre-selected Mainstream SKUs to optimize the performance, predictability, and fulfillment experience. Check the Template section in our configurators for eligible Mainstream configurations.

European Union Erp Lot 9 Regulation

Beginning on January 1st, 2024, units sold into the European Union (EU), European Economic Area (EEA), the United Kingdom, Ireland, Switzerland or Turkey, must include more efficient AC power supplies: 94% for multi-output and 96% for single-output. HPE Flexible Slot power supplies are single-output, and part numbers 865438-B21, P03178-B21, and P44712-B21 are 96% efficient, thus meeting requirements.

HPE is on target to fulfill compliant systems ahead of time and will begin enforcing these requirements in advance to satisfy requests with the current power supplies by the set deadline.

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.

Step 1: Base Configuration (choose one (1) of the following configurable models from the tables below)

CTO Server	HPE ProLiant DL345 Gen11 8LFF Configure-to-order Server	HPE ProLiant DL345 Gen11 8SFF Configure-to-order Server	HPE ProLiant DL345 Gen11 24SFF Configure-to-order Server	HPE ProLiant DL345 Gen11 EDFF Configure-to-order Server	HPE ProLiant DL345 Gen11 GPU Configure-to-order Server
SKU Number	P54204-B21	P54205-B21	P54206-B21	P54207-B21	P54208-B21
TAA SKU	P54204-B21#GTA	P54205-B21#GTA	P54206-B21#GTA	P54207-B21#GTA	P54208-B21#GTA
HPE Trusted Supply Chain	P36394-B21 – Optional				
Processor	Not included as standard				
DIMM Slots	12-DIMM slots				
Storage Controller	Choice of HPE Smart Array controller				
PCIe	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)				
OCP3.0 slot	2 PCIe 5.0 x8				
Drive Cage – included	8 LFF	Not included	3 8SFF x1	Not included	Not included
Network Controller	Choice of either OCP 3.0 or select stand-up network adapters for primary networking selection plus additional/optional stand-up network adapters **Notes:** No embedded networking				
Cooling	Choice of Standard or Performance Heat Sink Choice of Standard or Performance Fan Kit				
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download), HPE Compute Ops Management (subscription included)				
Video	1 VGA rear				
USB	Front: 1 USB 3.2 Gen1 + iLO service port Rear: 2 USB 3.2 Gen1 Internal: 2 USB 3.2 Gen1				
Security	TPM2.0 (Trusted Platform Module) embedded				
Rail Kit	Optional Easy Install rails and CMA				
Form Factor	2U Rack				
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.				

Notes:

- HPE offers multiple Trade Agreement Act (TAA) compliant configurations to meet the needs of US Federal Government customers. These products are either manufactured or substantially transformed in a designated country. TAA compliance is only provided when HPE options are included as part of factory integrated orders (CTO).
- TAA compliant configuration requires TAA versions of the CTO Server SKUs.
- HPE Trusted Supply Chain (P36394-B21) is an optional security upgrade intended for agencies and regulated industries needing enhanced security and compliance needs. Applying this option to a DL345 Gen11 CTO server ensures it is built in the USA in a secured facility by vetted HPE personnel assigned to the manufacturing processes. A multitude of checkpoints/inspections for malicious microcode and counterfeit parts are performed throughout the server build, and additional safeguards are put in place against cyber-exploits throughout the server lifecycle. See "HPE Security" section within this document for more detail and learn more at http://www.hpe.com/security
- All CTO servers are Energy Star 4.0 compliant.

CTO Server	8 LFF CTO server	8 SFF CTO server	24 SFF CTO server	EDSFF CTO server	GPU CTO server
Included Drive Cage	8 LFF (2x 4LFF Drive cages)	Not included	3x 8 SFF U.3 x1 Drive Cage	Not included	Not included
Universal Media Bay	1 Optional	1 Optional	Not available	Not available	Not available
ODD	1 Optional	1 Optional	Not available	Not available	Not available
8 SFF SAS/SATA/NVMe (Front)	Not available	3 Optional	Not available	Not available	1 Optional
8 SFF SAS/SATA/NVMe (Mid Tray)	Not available	1 Optional	1 Optional	Not available	Not available
2 SFF SAS/SATA/NVMe (Front)	1 Optional	1 Optional	Not available	Not available	Not available
2 SFF SAS/SATA/NVMe (Rear)	1 Optional	1 Optional	1 Optional	Not available	Not available
4 LFF SAS/SATA	1 Optional	Not available	Not available	Not available	Not available
4 LFF Mid Tray	1 Optional	Not available	Not available	Not available	Not available
4 LFF Rear	1 Optional	Not available	Not available	Not available	Not available
12 EDSFF NVMe (Front)	Not available	Not available	Not available	3 Optional	1 Optional

Step 2: Choose Core Options

- Choice of 1 Processor model and Heat Sink Kit
  - Requires necessary Heat Sink for different processor wattage.
- Choice of DDR5 memory options.
  - Requires necessary Fan Kits for different memory configurations and subjects to the recommended system ambient temperature.
- Choice of Drive cage, Storage Controllers, and Storage Controller Cables
- Choice of SSD, HDD, and Optical Drives
- Choice of OS Boot Devices
- Choice of Riser Cards
- Choice of Networking options
  - PCIe standup or OCP 3.0. Requires necessary Fan Kits and subjects to the recommended system ambient temperature.
- Choice of Accelerator options
- Choice of Power and Cooling options
- Choice of Security options
- Choice of Software as a Service Management - HPE Compute Ops Management and HPE OneView

Step 3: Choose Additional Options

- Choice of Embedded Management
- Choice of Rail Kits
- Choice of Rack options
- Choice of Support Services

Choice of Core Options

Processor

Please select one 4th or 5th Generation AMD EPYC Processor

5th Generation AMD EPYC Processor

AMD EPYC 9845 2.1GHz 160-core 390W Processor for HPE	P72646-B21
AMD EPYC 9825 2.2GHz 144-core 390W Processor for HPE	P72647-B21
AMD EPYC 9745 2.4GHz 128-core 400W Processor for HPE	P72648-B21
AMD EPYC 9645 2.3GHz 96-core 320W Processor for HPE	P72649-B21
AMD EPYC 9655P 2.6GHz 96-core 400W Processor for HPE	P72662-B21
AMD EPYC 9565 3.15GHz 72-core 400W Processor for HPE	P72651-B21
AMD EPYC 9535 2.4GHz 64-core 300W Processor for HPE	P72652-B21
AMD EPYC 9575F 3.3GHz 64-core 400W Processor for HPE	P72758-B21
AMD EPYC 9555P 3.2GHz 64-core 360W Processor for HPE	P72663-B21
AMD EPYC 9475F 3.65GHz 48-core 400W Processor for HPE	P72666-B21
AMD EPYC 9455P 3.15GHz 48-core 300W Processor for HPE	P72664-B21
AMD EPYC 9365 3.4GHz 36-core 300W Processor for HPE	P72655-B21
AMD EPYC 9335 3.0GHz 32-core 210W Processor for HPE	P72656-B21
AMD EPYC 9375F 3.80GHz 32-core 320W Processor for HPE	P72667-B21
AMD EPYC 9355P 3.55GHz 32-core 280W Processor for HPE	P72665-B21
AMD EPYC 9255 3.20GHz 24-core 200W Processor for HPE	P72658-B21
AMD EPYC 9275F 4.1GHz 24-core 320W Processor for HPE	P72668-B21
AMD EPYC 9135 3.65GHz 16-core 200W Processor for HPE	P72660-B21
AMD EPYC 9115 2.6GHz 16-core 125W Processor for HPE	P72659-B21
AMD EPYC 9175F 4.2GHz 16-core 320W Processor for HPE	P72669-B21
AMD EPYC 9015 3.6GHz 8-core 125W Processor for HPE	P72661-B21

4th Generation AMD EPYC Processor

AMD EPYC 9754 2.25GHz 128-core 360W Processor for HPE	P60463-B21
AMD EPYC 9654P 2.4GHz 96-core 360W Processor for HPE	P53697-B21
AMD EPYC 9684X 2.55GHz 96-core 400W Processor for HPE	P63493-B21
AMD EPYC 9634 2.25GHz 84-core 290W Processor for HPE	P53705-B21
AMD EPYC 9534 2.45GHz 64-core 280W Processor for HPE	P53699-B21
AMD EPYC 9554P 3.1GHz 64-core 360W Processor for HPE	P53703-B21
AMD EPYC 9454P 2.75GHz 48-core 290W Processor for HPE	P53709-B21
AMD EPYC 9474F 3.6GHz 48-core 360W Processor for HPE	P53706-B21
AMD EPYC 9334 2.7GHz 32-core 210W Processor for HPE	P53712-B21
AMD EPYC 9354P 3.25GHz 32-core 280W Processor for HPE	P53704-B21
AMD EPYC 9374F 3.85GHz 32-core 320W Processor for HPE	P53710-B21
AMD EPYC 9384X 3.1GHz 32-core 320W Processor for HPE	P63492-B21
AMD EPYC 9254 2.9GHz 24-core 200W Processor for HPE	P53707-B21
AMD EPYC 9224 2.5GHz 24-core 200W Processor for HPE	P58540-B21
AMD EPYC 9274F 4.05GHz 24-core 320W Processor for HPE	P53711-B21

AMD EPYC 9124 3.0GHz 16-core 200W Processor for HPE	P53702-B21
AMD EPYC 9174F 4.1GHz 16-core 320W Processor for HPE	P53698-B21
AMD EPYC 9184X 3.55GHz 16-core 320W Processor for HPE	P63491-B21

Notes:

- Processors up to 240W require Standard Heat Sink (P58458-B21) and Standard Fan Kit (P58464-B21).
- Processors more than or equal to 260W require Performance Heat Sink (P58459-B21)
- If processor less than or equal to 300W is selected along 4LFF or 8SFF mid tray drive cage, then 1U Performance Heat Sink (P58457-B21) and Performance Fan Kits (P58465-B21) must be selected.

Memory

Please select one or more memory from below.

For new DDR5 memory, please go to HPE DDR5 Smart Memory QuickSpecs

For details on the Memory Population Rules and Guidelines with AMD EPYC 9004 series processors, please go to: https://www.hpe.com/psnow/doc/a50007481enw

Notes:

- Quantity of memory DIMMs selected per socket must be 1, 2, 4, 6, 8, 10, or 12.
- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model
- The maximum speed capability of the memory system is governed by the combination of the CPU and any other DIMMs installed in the server. If higher speed DIMMs are installed with a CPU that only supports a lower memory speed, the DIMMs will only run at the (lower) memory speed supported by the processor. Likewise, if memory DIMMs are mixed with slower DIMMs within a server, all DIMMs will run at the slower memory speed. For further information please refer to the Memory Population Rules for your specific server.
- The -B21 memory SKUs shown in this document are to be used when ordering stand -alone memory only. For each -B21 SKU, there is a corresponding -F21 SKU which is to be used when configuring servers with integrated memory DIMMs.

Registered DIMMs (RDIMMs)

DDR5-6400 (applies to the 5th Generation AMD® EPYC® Processors)

HPE 16GB (1x16GB) Single Rank x8 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit	P64984-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit	P64985-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit	P64986-B21
HPE 96GB (1x96GB) Dual Rank x4 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit	P64987-B21
HPE 128GB (1x128GB) Dual Rank x4 DDR5-6400 CAS-52-52-52 EC8 Registered Smart Memory Kit	P64988-B21
HPE 256GB (1x256GB) Quad Rank x4 DDR5-6400 CAS-60-52-52 EC8 Registered 3DS Smart Memory Kit	P73446-B21

DDR5-4800 (applies to the 4th Generation AMD® EPYC® Processors)

HPE 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P50309-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P50311-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P50312-B21

HPE 96GB (1x96GB) Dual Rank x4 DDR5-4800 CAS-46-45-45 EC8 Registered Smart Memory Kit	P66676-B21
HPE 128GB (1x128GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P69982-B21

Notes:

- Mixing of x4 memory and x8 memory is not supported.
- Mixing of 3DS memory and non-3DS memory is not supported.
- If 256GB memory is selected then "4LFF Midtray" OR "8SFF x1 Midtray" OR "8SFF x4 Midtray" cannot be selected.
- Supported cooling configuration of 256GB memory:

Front Drive Bay	Mid Tray	Fan Kits
12 LFF SAS/SATA	None	Perf Fan
16 SFF SAS/SATA/NVMe + media bay	None	Perf Fan
24 SFF SAS/SATA/NVMe	None	Perf Fan
20/24 EDSFF NVMe	None	Perf Fan
36 EDSFF NVMe	None	Perf Fan
24 SFF SAS/SATA/NVMe	8SFF	Not Supported
12 LFF SAS/SATA	4LFF	Not Supported

Storage

Drive cages

Notes:

- Mixing of 8SFF x4 backplane kit and 8SFF x1 backplane kit is not supported.
- Maximum one (1) 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) OR 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) can be selected in the order.
- The type of drives that each drive cage supports is listed in the below table.

PN	Description	SATA	SAS	NVMe U.3 Static SSD	NVMe U.3 SSD	NVMe U.2 SSD
P55082-B21	HPE DL3x5 Gen11 8SFF TM U.3 x1 BC BP Kit	X	X	X	X	Not Supported
P55083-B21	HPE DL3x5 Gen11 8SFF TM U.3 x4 BC BP Kit	X	X	X	X	Not Supported
P57108-B21	HPE DL345 Gen11 8SFF x1 TM BC Mid Kit	X	X	X	X	Not Supported
P57109-B21	HPE DL345 Gen11 8SFF x4 TM BC Mid Kit	X	X	X	X	Not Supported
P57110-B21	HPE DL345 Gen11 2SFF x4 TM BC Kit	X	X	X	X	Not Supported
P57111-B21	HPE DL345 Gen11 2SFF x4 TM BC Box1 Kit	X	X	X	X	Not Supported
P57112-B21	HPE DL345 Gen11 4LFF x1 SAS/SATA Mid Kit	X	X	Not Supported	Not Supported	Not Supported
P57113-B21	HPE DL345 Gen11 4LFF x1 SAS/SATA FIO Kit	X	X	Not Supported	Not Supported	Not Supported
P57114-B21	HPE DL345 Gen11 4LFF x1 SAS/SATA BP Kit	X	X	Not Supported	Not Supported	Not Supported
P57867-B21	HPE DL3x5 Gen11 GPU 8SFF U.3 Kit	X	X	X	X	Not Supported

HPE ProLiant DL385 Gen11 8SFF Tri-Mode U.3 x1 BC Backplane Kit P55082-B21

Notes:

- Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front.
- This drive cage can only be selected with the 8SFF CTO server (P54205-B21).
- Max = 2.
- Please select the 24SFF CTO server (P54206-B21) for three (3) 8SFF x1 U.3 drive cage configuration.
- If this Backplane kit is selected then one of the following cable options is supported:
  - With PCIe controllers: 8SFF x1 Tri-Mode Box2/3 Primary Cable Kit (P57123-B21).
  - Onboard SATA: 8SFF x1 NVMe/SATA Direct Attach Box2/3 Cable Kit (P57121-B21).

Core Options

HPE ProLiant DL385 Gen11 8SFF Tri-Mode U.3 x4 BC Backplane Kit P55083-B21

Notes:

- Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front.
- This drive cage can only be selected with the 8SFF CTO server (P54205-B21).
- Max = 3.
- If one(1) of this backplane is selected then one of the following cable options is supported:
  - With PCIe controllers: 8SFF x4 Tri-Mode Box3 Primary Cable Kit (P57127-B21).
  - NVMe Direct attach (x4 bandwidth): 8SFF x4 NVMe Box3 Direct Attach Cable Kit (P57124-B21) and cannot select 4PCIE Enablement Kit (P57116-B21).
- if three (3) of this backplane is selected then one of the following cable options is supported:
  - NVMe Direct Attach (x2 bandwidth): 24SFF x2 NVMe Box1-3 Direct Attach Cable Kit (P57126-B21).
  - NVMe Direct Attach (x4 bandwidth): Requires two (2) OCP retimers and Direct Attach cable kit (P57125-B21)
  - With PCIe controllers (x2 bandwidth): 24SFF x2 Tri-Mode Box1-3 Cable Kit (P57129-B21).
  - With PCIe controllers (x4 bandwidth): 24SFF x4 Tri-Mode Box1-3 Primary/Secondary Cable Kit (P57128-B21).

HPE ProLiant DL345 Gen11 24SFF x4 NVMe FIO Bundle Kit P59256-B21

Notes:

- Supports 24SFF NVMe x4 direct attach, including 3 PCs 8SFF x4 U.3 backplane (P55083-B21), a Direct Attach Cable Kit (P57124-B21), and 2 PCs OCP retimer (P65876-B21)
- This bundle kit can only be selected with the 8SFF CTO server (P54205-B21).
- Max = 1.
- This is a factory integrated only option.

HPE ProLiant DL345 Gen11 2SFF x4 Tri-Mode U.3 BC Front/Tertiary Stackable Drive Cage Kit P57110-B21

Notes:

- Supports 2 SFF of SAS/ SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front or rear.
- Max = 1.
- If this drive cage is selected then 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) and 4LFF x1 Rear Bay Backplane kit (P57113-B21) must not be selected.
- If the SFF media bay (P57857-B21) is selected then this 2SFF drive cage will be installed at the rear.
- Requires Performance Fan Kit (P58465-B21) if this 2SFF drive cage is at the rear.

Core Options

HPE ProLiant DL345 Gen11 2SFF x4 Tri-Mode U.3 BC Side-by-Side Box 1 Drive Cage Kit P57111-B21

Notes:

- Supports 2 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front.
- This drive cage can only be selected with the 8LFF CTO server (P54204-B21).
- Max = 1.
- If this drive cage is selected then 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) and 4LFF x1 Backplane kit (P57114-B21) must not be selected.

HPE ProLiant DL345 Gen11 4LFF x1 SAS/SATA 12G Front Backplane Kit P57114-B21

Notes:

- Supports 4 LFF SAS/SATA Basic Carrier (BC) Drives at the front.
- This drive cage can only be selected with the 8LFF CTO server (P54204-B21).
- Max = 1.
- If this drive cage is selected then 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) must not be selected.

HPE ProLiant DL345 Gen11 4LFF x1 SAS/SATA Mid Tray Drive Cage Kit P57112-B21

Notes:

- Supports 4 LFF SAS/SATA Basic Carrier (BC) Drives at the Mid Tray.
- This drive cage can only be selected with the 8LFF CTO server (P54204-B21).
- Max = 1.
- Requires processor less than or equal to 300W.
- Requires Performance Fan Kit (P58465-B21) and 1U Performance Heat Sink (P58457-B21).

HPE ProLiant DL345 Gen11 4LFF x1 SAS/SATA Rear FIO Drive Cage Kit P57113-B21

Notes:

- Supports 4 LFF SAS/SATA Basic Carrier (BC) Drives at the rear.
- This drive cage can only be selected with the 8LFF CTO server (P54204-B21).
- Max = 1.
- Requires Performance Fan Kit (P58465-B21).
- Requires 12LFF drive bay (P57114-B21).
- Maximum one (1) of 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 4LFF x1 Rear Bay Backplane kit (P57113-B21) is allowed.
- This is a factory integrated only option.

HPE ProLiant DL345 Gen11 36EDSFF x2 NVMe Box 1-3 Direct Attach Drive Cage Kit P55090-B21

Notes:

- Supports 36 EDSFF NVMe Drives in Box 1-3 at x2 speed
- This drive cage can only be selected with the EDSFF CTO server (P54207-B21).
- Max = 1.
- This is a factory integrated only option.
- No additional cable selection required.

Core Options

HPE ProLiant DL345 Gen11 20EDSFF x4 Box 2-3 FIO Drive Cage Kit P64383-B21

Notes:

- Supports 20 EDSFF NVMe Drives in Box 2-3 at x4 speed
- This drive cage can only be selected with the EDSFF CTO server (P54207-B21).
- Max = 1.
- This is a factory integrated only option.
- Bay #9-12 of box 2 is blocked from drive installation due to PCIe lane limitation.
- No additional cable selection required.

HPE ProLiant DL345 Gen11 24EDSFF x4 Box 2-3 Tri-Mode Drive Cage Kit P70438-B21

Notes:

- Supports 24 EDSFF NVMe Drives in Box 2-3
- This drive cage can only be selected with the EDSFF CTO server (P54207-B21).
- Max = 1.
- Requires 3pcs 32 lanes controllers to support 24 drives at x4 speed.

HPE ProLiant DL3X5 Gen11 GPU 8SFF U.3 FIO Backplane Kit P57867-B21

Notes:

- Supports 8 SFF NVMe Basic Carrier (BC).
- This drive cage can only be selected with the GPU CTO server (P54208-B21).
- Max = 1.
- If this backplane is selected then one of the following cable options is supported:
  - With PCIe controllers: 8SFF x4 GPU Tri-Mode PCIe Cable Kit (P70406-B21).
  - With OCP controllers: 8SFF x2 GPU Tri-Mode OCP Cable Kit (P69868-B21)
  - NVMe Direct attach (x4 bandwidth): No additional cable selection required.

HPE ProLiant DL3X5 Gen11 GPU EDSFF FIO Backplane Kit P62355-B21

Notes:

- Supports 12 EDSFF NVMe Drives Direct Attach.
- This drive cage can only be selected with the GPU CTO server (P54208-B21).
- Max = 1.
- Requires signal cable kit (P64381-B21) in the order

HPE ProLiant DL345 Gen11 OCP3 PCIe Gen5 FIO Retimer Card Kit P65876-B21

Notes:

- Supports 24 SFF NVMe Drives Direct Attach at x4 bandwidth.
- This option can only be selected with the 8SFF CTO server (P54205-B21).
- Max = 2.
- This is a factory integrated only option.

HPE ProLiant DL3X5 Gen11 SFF Universal Media Bay Kit P57857-B21

Notes:

- This Universal Media Bay kit includes a cage, 2 USBs, and 1 DP port, and supports 1 Optical Drive.
- This media bay can only be selected with the 8SFF CTO server (P54205-B21).
- Max = 1.
- If the 8SFF CTO server (P54205-B21) and Optical Drives (701498-B21, 726536-B21, and 726537-B21) are selected then this Universal Media Bay Kit and ODD cable kit (P59602-B21) must be selected.
- This Media Bay kit cannot be selected with the preconfigured models (P58792-B21, P58793-B21).

Storage Controller

The Gen11 storage controller portfolio has been updated to include new technology like OCP3.0 as well as PCIe adapters. For a more detailed breakout of the available Gen11 controllers visit the storage controllers QuickSpecs site:

HPE Compute MR Gen11 Controllers QuickSpecs

HPE Compute SR Gen11 Controllers QuickSpecs

Notes:

- When selecting SR RAID controllers for external storage (E208e-p, 804398-B21) and MR RAID controllers for internal storage, please be aware these two products use different RAID configuration tools.
- Mixing of MR (MegaRAID) series controllers and SR (SmartRAID) series controllers is not allowed.

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

Notes:

- This controller supports up to 8 SAS/SATA Drives (external).
- Controller Based Encryption (CBE) with a remote key management server is not supported. Local key management(LKM) is supported.
- One Button Secure Erase (OBSE) used to sanitize drives and factory reset the controller is not supported.

HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller P47789-B21

Notes: This controller supports up to 16 SAS/SATA/NVMe Drives.

HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller P58335-B21

Notes:

- This controller supports up to 8 SAS/SATA/NVMe Drives.
- Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm cable (P02377-B21).

HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller P47781-B21

Notes:

- This controller supports up to 16 SAS/SATA/NVMe Drives.
- Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm cable (P02377-B21).

HPE MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller P47785-B21

Notes: This controller supports up to 16 SAS/SATA/NVMe Drives.

HPE MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller P47777-B21

Notes:

- This controller supports up to 16 SAS/SATA/NVMe Drives.
- Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm cable (P02377-B21).

HPE SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller P47184-B21

Notes:

- This controller supports up to 32 SAS/SATA/NVMe Drives.
- Requires 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) or Smart Hybrid Capacitor w/ 145mm cable (P02377-B21).

Battery and Hybrid Capacitor

HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit P02377-B21

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

HPE ProLiant DL325 Gen11 Megacell Extension Cable Kit P56659-B21

Notes:

- If HPE 96W Smart Stg Li-ion Batt 145mm Kit is selected then HPE Smart Hybrid Capacitor 145mm kit cannot be selected and vice versa.
- If M.2 enablement Kit and "96W Smart Stg Li-ion Batt 145mm Kit OR Smart Hybrid Capacitor w/ 145mm Kit" are selected then Megacell Ext cable Kit must be selected.

Storage Cables

HPE ProLiant DL345 Gen11 8SFF x1 Box 2/3 Direct Attach Cable Kit P57121-B21

Notes: supports 8 SFF U.3 NVMe/SATA in box 2/3 Direct Attach with x1 bandwidth.

HPE ProLiant DL345 Gen11 8SFF x4 NVMe Box 3 Direct Attach Cable Kit P57124-B21

Notes: supports 8 SFF U.3 NVMe in box3 Direct Attach with up to x4 bandwidth.

HPE ProLiant DL345 Gen11 24SFF x2 NVMe Box 1-3 Direct Attach Cable Kit P57126-B21

Notes: supports 24 SFF U.3 NVMe in box 1-3 Direct Attach with x2 bandwidth.

HPE ProLiant DL345 Gen11 24SFF x4 NVMe Box 1-3 Direct Attach Cable Kit P57125-B21

Notes: supports 24 SFF U.3 NVMe in box 1-3 Direct Attach with x4 bandwidth.

HPE ProLiant DL345 Gen11 8SFF x1 SR932i-p Primary Box 1 Tri-Mode Cable Kit P57122-B21

Notes: supports 8 SFF U.3 SAS/SATA/NVMe in box1 connecting to SR932i-p controller with x1 bandwidth.

HPE ProLiant DL345 Gen11 8SFF x1 Primary Box 2/3 Tri-Mode Cable Kit P57123-B21

Notes: supports 8 SFF U.3 SAS/SATA/NVMe in box 2/3 connecting to PCIe storage controllers with x1 bandwidth.

HPE ProLiant DL345 Gen11 8SFF x4 Primary Box 3 Tri-Mode Cable Kit P57127-B21

Notes: supports 8 SFF U.3 SAS/SATA/NVMe in box 3 connecting to PCIe storage controllers with up to x4 bandwidth.

HPE ProLiant DL345 Gen11 24SFF x4 Box 1-3 Tri-Mode PCIe Cable Kit P57128-B21

Notes: supports 24 SFF U.3 SAS/SATA/NVMe in box 1-3 connecting to PCIe storage controllers with up to x4 bandwidth.

Core Options

HPE ProLiant DL345 Gen11 24SFF x2 Box 1-3 Tri-Mode Cable Kit P57129-B21

Notes: Supports 24 SFF U.3 SAS/SATA/NVMe in box 1-3 connecting with PCIe storage controllers with x2 bandwidth.

HPE ProLiant DL345 Gen11 8LFF x1 SAS/SATA Primary Cable Kit P59254-B21

Notes: Supports 8 LFF SAS/SATA in box 1-2 connecting to PCIe storage controllers.

HPE ProLiant DL345 Gen11 12EDSFF x4 Direct Attach GPU Front Enablement Kit P64381-B21

Notes:

- Supports 12 EDSFF NVMe in GPU CTO server.
- Must select together with 12EDSFF drive cage P62355-B21

HPE ProLiant DL3X5 Gen11 GPU 8SFF x2 OCP Tri-Mode Cable Kit P69868-B21

Notes: supports 8 SFF U.3 SAS/SATA/NVMe connecting to OCP storage controllers at x2 bandwidth in GPU CTO server.

HPE ProLiant DL3X5 Gen11 1P GPU 8SFF/EDSFF x4 Tri-Mode PCIe Cable Kit P70406-B21

Notes: supports 8 SFF U.3 SAS/SATA/NVMe connecting to PCIe storage controllers at x4 bandwidth in GPU CTO server.

HPE ProLiant DL3X5 Gen11 GPU 8SFF/EDSFF x4 PCIe Tri-Mode Cable Kit P69866-B21

Notes: supports 8 EDSFF NVMe connecting to PCIe storage controllers at x4 bandwidth in GPU CTO server.

Supported Storage Configurations
8SFF CTO server

Drives				Drive Cage					Controller + Cables
Max	SAS	SATA	NVMe	Front Box3	Front Box2	Front Box1	Mid Box7	Rear Box8	
8	0	8	0	P55082-B21	-	-	-	-	8SFF DA(SATA) + P57121-B21
8	8	8	8	P55082-B21	-	-	-	-	PCIe Ctrlr + P57123-B21
10	2	10	2	P55082-B21	-	P57110-B21	-	-	8SFF DA(SATA) + P57121-B21; Box1 2SFF OCP Ctrlr
10	10	10	10	P55082-B21	-	P57110-B21	-	-	8SFF PCIe Ctrlr + P57123-B21; Box1 2SFF OCP Ctrlr
16	0	16	0	P55082-B21	P55082-B21	-	-	-	16SFF DA(SATA) + P57121-B21
16	16	16	16	P55082-B21	P55082-B21	-	-	-	16SFF PCIe Ctrlr + P57123-B21
18	2	18	2	P55082-B21	P55082-B21	P57110-B21	-	-	16SFF DA(SATA) + P57121-B21; Box1 2SFF OCP Ctrlr
18	18	18	18	P55082-B21	P55082-B21	P57110-B21	-	-	16SFF PCIe Ctrlr + P57123-B21; Box1 2SFF OCP Ctrlr
18	2	18	2	P55082-B21	P55082-B21	-	-	P57110-B21	16SFF DA(SATA) + P57121-B21; Rear: 2SFF OCP Ctrlr
8	0	0	8	P55083-B21	-	-	-	-	8SFF DA(NVMe x4) + P57124-B21
8	8	8	8	P55083-B21	-	-	-	-	8SFF SR932i-p + P57127-B21
10	2	2	10	P55083-B21	-	P57110-B21	-	-	8SFF DA(NVMe x4) + P57124-B21; Box1 2SFF OCP Ctrlr
10	10	10	10	P55083-B21	-	P57110-B21	-	-	8SFF SR932i-p + P57127-B21; Box1 2SFF OCP Ctrlr
10	2	2	10	P55083-B21	-	-	-	P57110-B21	8SFF DA(NVMe x4) + P57124-B21; Rear: 2SFF OCP Ctrlr
10	10	10	10	P55083-B21	-	-	-	P57110-B21	8SFF SR932i-p + P57127-B21; Rear: 2SFF OCP Ctrlr
24	0	0	24	P55083-B21	P55083-B21	P55083-B21	-	-	24SFF DA(NVMe x2) + P57126-B21
24	24	24	24	P55083-B21	P55083-B21	P55083-B21	-	-	24SFF x4 3*SR932i-p + P57128-B21
24	24	24	24	P55083-B21	P55083-B21	P55083-B21	-	-	16SFF x2 2*SR932i-p + P57129-B21; Box1 8SFF OCP Ctrlr
24	0	0	24	P55083-B21	P55083-B21	P55083-B21	-	-	24SFF DA(NVMe x4) + P57125-B21 + 2*P65876-B21

32	0	0	32	P55083-B21	P55083-B21	P55083-B21	P57109-B21	-	Front & Mid: 32SFF DA(NVMe x2) + P57126-B21
32	32	32	32	P55083-B21	P55083-B21	P55083-B21	P57109-B21	-	Front & Mid: 32SFF x2 2*SR932i-p + P57129-B21

Notes:

- DA = Direct Attach; Ctrlr = controller
- If no controller or cable kit information in the table then cable kit selection is not required.

24SFF CTO server

Drives				Drive Cage			Controller + Cables
Max Qty	SAS	SATA	NVMe	Front	Mid	Rear	
24	24	24	24	Included	-	-	SR932i-p
24	24	24	24	Included	-	-	2* MR416/216i-p
32	32	32	32	Included	P57108-B21	-	Front & Mid: SR932i-p
32	32	32	32	Included	P57108-B21	-	Front & Mid: 2* MR416/216i-p
34	34	34	34	Included	P57108-B21	P57110-B21	Front & Mid: 2* MR416/216i-p; Rear: OCP Ctrlr

8LFF CTO server

Drives						Drive Cage			Controller + Cable Kit
Max Qty	LFF SAS	LFF SATA	SFF SAS	SFF SATA	SFF NVMe	Front	Mid	Rear	
8	0	8	0	0	0	Included	-	-	8LFF DA (SATA)
8	8	8	0	0	0	Included	-	-	PCIe ctrlr + P59254-B21
12	0	12	0	0	0	P57114-B21	-	-	12LFF DA (SATA)
12	12	12	0	0	0	P57114-B21	-	-	PCIe ctrlr + P59254-B21
16	0	16	0	0	0	P57114-B21	P57112-B21	-	16LFF DA (SATA)
16	16	16	0	0	0	P57114-B21	P57112-B21	-	PCIe ctrlr + P59254-B21
20	0	20	0	0	0	P57114-B21	P57112-B21	P57113-B21	20LFF DA (SATA)
20	20	20	0	0	0	P57114-B21	P57112-B21	P57113-B21	SR932i-p + P59254-B21
20	4	20	0	0	0	P57114-B21	P57112-B21	P57113-B21	Front & Mid: 16LFF DA (SATA); Rear: OCP Ctrlr
20	20	20	0	0	0	P57114-B21	P57112-B21	P57113-B21	Front & Mid: PCIe ctrlr + P59254-B21; Rear: OCP Ctrlr
10	0	8	2	2	2	Included	-	P57110-B21	Front: 8LFF DA (SATA); Rear: OCP Ctrlr
10	8	8	2	2	2	Included	-	P57110-B21	Front: PCIe ctrlr + P59254-B21; Rear: OCP Ctrlr
14	0	12	2	2	2	P57114-B21	-	P57110-B21	Front: 12LFF DA (SATA); Rear: OCP Ctrlr
14	12	12	2	2	2	P57114-B21	-	P57110-B21	Front: PCIe ctrlr + P59254-B21; Rear: OCP Ctrlr
18	0	16	2	2	2	P57114-B21	P57112-B21	P57110-B21	Front & Mid: 16LFF DA (SATA); Rear: OCP Ctrlr
18	16	16	2	2	2	P57114-B21	P57112-B21	P57110-B21	Front & Mid: PCIe ctrlr + P59254-B21; Rear: OCP Ctrlr
10	0	8	2	2	2	P57111-B21	-	-	Front: 8LFF DA (SATA) + 2SFF to OCP Ctrlr
10	8	8	2	2	2	P57111-B21	-	-	Front: 8LFF PCIe ctrlr + P59254-B21 & 2SFF to OCP Ctrlr
16	0	16	0	0	0	P57114-B21	-	P57113-B21	Front & Rear: 16LFF DA (SATA); Rear: OCP Ctrlr
16	4	16	0	0	0	P57114-B21	-	P57113-B21	Front: 12LFF DA (SATA); Rear: OCP Ctrlr

16	16	16	0	0	0	P57114-B21	-	P57113-B21	Front: PCIe ctrlr + P59254-B21; Rear: OCP Ctrlr
16	16	16	0	0	0	P57114-B21	-	P57113-B21	Front & Rear: PCIe ctrlr + P59254-B21

Notes:

- DA = Direct Attach; Ctrlr = controller
- If no controller or cable kit information in the table then cable kit selection is not required.

EDSFF CTO server

Drives				Drive Cage			Controller + Cables
Max Qty	SAS	SATA	NVMe	Box3	Box2	Box1	
20	-	-	20	P55090-B21		-	20EDSFF NVMe x4 DA
24	-	-	24	P57115-B21		-	24EDSFF NVMe x4 DA
36	-	-	36	P64383-B21			36EDSFF NVMe x2 DA
24	-	-	24	P70438-B21		-	3* SR932i-p

GPU CTO server

Drives				Drive Cage		Controller + Cables
Max Qty	SAS	SATA	NVMe	Box1	Box8	
12	-	-	12	P62355-B21	-	P64381-B21 (12EDSFF NVMe x4 DA)
8	-	-	8	P57867-B21	-	8SFF NVMe x4 DA
8	-	-	8	P62355-B21	-	SP932i-p + P69866-B21 (8EDSFF NVMex4 to Ctrlr)
8	8	8	8	P57867-B21	-	SR932i-p + P70406-B21 (8SFF NVMe x4 to Ctrlr)
8	8	8	8	P57867-B21	-	MR416/216i-o + P69868-B21

Notes:

- DA = Direct Attach; Ctrlr = controller
- If no controller or cable kit information in the table then cable kit selection is not required.

HPE Drives

Solid State Drives

For SSD selection guidance, please visit https://ssd.hpe.com/

Read Intensive - 12G SAS – SFF

HPE 960GB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40506-B21
HPE 1.92TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40507-B21
HPE 3.84TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40508-B21
HPE 7.68TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40509-B21
HPE 1.92TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49031-B21
HPE 3.84TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49035-B21
HPE 7.68TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49041-B21
HPE 15.36TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49045-B21

Mixed Use - 12G SAS - SFF

HPE 960GB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40510-B21
HPE 1.92TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40511-B21
HPE 3.84TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40512-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49049-B21
HPE 800GB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49047-B21
HPE 3.2TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49053-B21
HPE 6.4TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49057-B21
HPE 960GB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49029-B21

Mixed Use – 12G SAS– LFF

HPE 960GB SAS 12G Mixed Use LFF LPC Value SAS Multi Vendor SSD	P37009-B21

Read Intensive - 6G SATA – SFF

HPE 480GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40497-B21
HPE 960GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40498-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40499-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40500-B21
HPE 7.68TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40501-B21
HPE 480GB SATA 6G Read Intensive SFF BC PM893a SSD	P63886-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893a SSD	P63910-B21

Mixed Use - 6G SATA - SFF

HPE 480GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40502-B21
HPE 960GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40503-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40504-B21
HPE 3.84TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40505-B21

Read Intensive – 6G SATA – LFF

HPE 960GB SATA 6G Read Intensive LFF LPC Multi Vendor SSD	P47808-B21

Read Intensive - NVMe – SFF

HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50216-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50222-B21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50224-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD	P63833-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD	P63837-B21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD	P63841-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Static PM1753 SSD	P78806-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Static PM1753 SSD	P78808-B21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Static PM1753 SSD	P78810-B21
HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64846-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64848-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PS1010 SSD	P70434-B21
HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PS1010 SSD	P70436-B21
HPE 15.36TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 SPDM 7500b SSD	P84239-B21

Mixed Use - NVMe – SFF

HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD	P63845-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD	P63849-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 CM7 SSD	P63853-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65023-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PS1030 SSD	P70426-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PS1030 SSD	P70428-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Static PM1755 SSD	P78801-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Static PM1755 SSD	P78804-B21

Read Intensive – NVMe - EDSFF E3.S 1T

HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57799-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57807-B21
HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61179-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61183-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM CM7 SSD	P61187-B21
HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD	P69234-B21
HPE 15.36TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD	P69546-B21
HPE 3.84TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD	P70392-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD	P70395-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 PS1010 SSD	P70397-B21
HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD	P77269-B21
HPE 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD	P77271-B21
HPE 15.36TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 EDSFF SPDM PE1010 SSD	P77275-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD	P79122-B21
HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 Self-encrypting 7600 SSD	P87719-B21
HPE 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 Self-encrypting 7600 SSD	P87721-B21

HPE 7.68TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 Self-encrypting 7600 SSD	P87723-B21
HPE 1.92TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 SPDM 7600 SSD	P85121-B21
HPE 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 SPDM 7600 SSD	P85124-B21
HPE 7.68TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 SPDM 7600 SSD	P85126-B21
HPE 15.36TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 SPDM 7600 SSD	P85128-B21
Mixed Use - NVMe – EDSFF E3.S 1T	
HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 SPDM 7600 SSD	P85114-B21
HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 SPDM 7600 SSD	P85117-B21
HPE 6.4TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 SPDM 7600 SSD	P85119-B21
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD	P61191-B21
HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD	P69241-B21
HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD	P69243-B21
HPE 6.4TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 CD8P SSD	P69245-B21
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD	P70399-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD	P70401-B21
HPE 12.8TB NVMe Gen5 High Performance Mixed Use E3S EC1 PS1030 SSD	P70403-B21
HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD	P77262-B21
HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD	P77265-B21
HPE 6.4TB NVMe Gen5 Mainstream Performance Mixed Use E3S EC1 EDSFF SPDM PE1030 SSD	P77267-B21
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3.S EC1 PM1755 SSD	P78784-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3.S EC1 PM1755 SSD	P78787-B21
Very Read Optimized – NVMe – EDSFF E3.S 1T	
HPE 3.84TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD	P63930-B21
HPE 7.68TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD	P63934-B21
HPE 15.36TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD	P63938-B21
HPE 30.72TB NVMe Gen4 Mainstream Performance Very Read Optimized E3S EC1 EDSFF P5430 SSD	P79065-B21
SED (Self-Encryption Drive) – SATA SFF	
HPE 960GB SATA 6G Mixed Use SFF BC Self-encrypting 5400M SSD	P58244-B21
HPE 480GB SATA 6G Read Intensive SFF BC Self-encrypting 5400P SSD	P58236-B21
SED (Self-Encryption Drive) – SAS SFF	
HPE 1.6TB SAS Mixed Use SFF BC Self-encrypting FIPS 140-2 PM7 SSD	P63871-B21
HPE 3.84TB SAS Read Intensive SFF BC Self-encrypting FIPS 140-2 PM7 SSD	P63875-B21
SED (Self-Encryption Drive) – NVMe SFF	
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61043-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61051-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61059-B21
HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61019-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61027-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 Self-encrypting FIPS 140-3 CM7 SSD	P61035-B21

SED (Self-Encryption Drive) – NVMe – EDSFF E3.S 1T

HPE 1.6TB NVMe Gen5 Mainstream Performance Mixed Use E3.S EC1 Self-encrypting 7600 SSD	P87715-B21
HPE 3.2TB NVMe Gen5 Mainstream Performance Mixed Use E3.S EC1 Self-encrypting 7600 SSD	P87717-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD	P70672-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD	P70674-B21
HPE 15.36TB NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting FIPS 140-3 CM7 SSD	P79122-B21

Hard Disk Drive

Enterprise - 12G SAS - SFF Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P28352-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P28586-B21
HPE 300GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P40430-B21
HPE 600GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD	P53561-B21
HPE 1.8TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD	P53562-B21

Notes: Suggest ambient temperature is 25C If the 15K drives are installed in the Midtray or the Rear drive bay.

Midline - 12G SAS - LFF Drives

HPE 12TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881781-B21
HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834031-B21
HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833928-B21
HPE 16TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23608-B21
HPE 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53553-B21

Midline - 6G SATA - LFF Drives

HPE 2TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861681-B21
HPE 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861683-B21
HPE 1TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	861686-B21
HPE 12TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	881787-B21
HPE 8TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834028-B21
HPE 16TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23449-B21
HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53554-B21

SED (Self-Encryption Drive)

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3yr Wty 512e FIPS 140-2 TAA-compliant HDD	P28618-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3yr Wty FIPS 140-2 TAA-compliant HDD	P28622-B21

Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21
HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21
HPE Mobile USB DVD-RW Optical Drive	701498-B21
HPE ProLiant DL3XX Gen11 LFF ODD/Display Port Enablement Kit	P52150-B21
HPE ProLiant DL345 Gen11 ODD Cable Kit	P59602-B21

Notes:

- If the optical drive is selected along with 8 LFF CTO server (P54204-B21) then LFF ODD/DP Enablement Kit (P52150-B21) and ODD Cable Kit (P59602-B21) must be selected.
- If the optical drive is selected along with 8 LFF CTO server (P54204-B21) then 4LFF x1 SAS/SATA 12G Front Backplane Kit (P57114-B21) cannot be selected.
- If the optical drive is selected along with the 8SFF CTO server (P54205-B21) then the Universal Media Bay Kit (P57857-B21) and ODD cable kit (P59602-B21) must be selected.
- If the optical drive is selected along with the 8SFF CTO server (P54205-B21), then the 8SFF x4 drive cage (P57109-B21) and 8SFF x4 direct attach cable kit (P57124-B21) cannot be selected.

Boot Controllers

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device	P48183-B21
HPE NS204i-u v2 480GB NVMe Hot Plug Boot Optimized Storage Device	P78279-B21
HPE NS204i-u v2 960GB NVMe Hot Plug Boot Optimized Storage Device	P81160-B21
HPE NS204i-u v2 960GB NVMe SED Hot Plug Boot Optimized Storage Device	P81162-B21

Notes:

- RAID 1 is preconfigured on the NS204i-u boot device and NO additional RAID can be applied.
- There are two locations to support NS204i-u hot plug boot device on DL345 Gen11 server
  - Above the power supplies unit slot2 location
  - Secondary Riser slot6 with 4LFF rear drive cage and low profile riser kit.
- If this NS204i-u boot device is selected then the NS204i-u Cable Kit (P57013-B21) must be selected.
- If this NS204i-u boot device is selected along with the 4LFF rear drive cage (P57113-B21), then the Low Profile Riser kit (P59260-B21) must be selected.
- For additional information, please visit HPE OS Boot Device QuickSpecs

HPE ProLiant DL3X5 Gen11 NS204i-u NVMe Hot Plug Boot Device Cable Kit	P57013-B21
HPE ProLiant DL325 Gen11 NVMe/SATA M.2 Enablement Kit	P57014-B21

Notes:

- Requires two (2) M.2 SSD Drives In the same interface (SATA or NVMe).
- No RAID is supported on this M.2 enablement kit.
- If this M.2 enablement kit is selected along with GPU CTO server then Battery and Hybrid Capacitor (P02377-B21 and P01366-B21) are not allowed.

Read Intensive - M.2 - Solid State Drives

HPE 480GB SATA 6G Read Intensive M.2 Multi Vendor SSD	P47818-B21
HPE 480GB NVMe Gen4 Mainstream Performance Read Intensive M.2 2280 PE9010 SSD	P80318-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive M.2 2280 PE9010 SSD	P80321-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive M.2 2280 PE9010 SSD	P80324-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive M.2 2280 Self-encrypting PE9010 SSD	P80327-B21

Risers

Notes:

- The riser shipping default in all CTO server are two (2) PCIe Gen5 x16 FH HL. One at the primary riser slot 3 and another at the secondary riser slot 6.
- Maximum one (1) 4PCIe enablement kit (P57116-B21) or 6PCIe enablement kit (P5117-B21) is allowed.

HPE ProLiant DL345 Gen11 4 PCIe x16 Enablement Kit P57116-B21

Notes:

- Supports four (4) PCIe Gen5 x16 risers. Three (3) at the primary riser slot 1/2/3 and one (1) at the secondary riser slot 6.
- if 4LFF rear drive cage (P57113-B21) is selected then 4 PCIe x16 enablement kit cannot be selected.

HPE ProLiant DL345 Gen11 6 PCIe x16 Enablement Kit P57117-B21

Notes:

- Supports Six (6) PCIe Gen5 x16 risers. Three (3) at the primary riser slot 1/2/3 and three (3) at the secondary riser slot 4/5/6.
- if 4LFF rear drive cage (P57113-B21) is selected then 6 PCIe x16 enablement kit cannot be selected.

HPE ProLiant DL385 Gen11 x16 Primary FIO Riser Kit for LFF Rear Cage P55098-B21

Notes:

- Supports one (1) PCIe Gen5 x16 risers at the primary riser slot 3 or Secondary riser slot 6.
- Max = 2
- Requires 4LFF rear drive cage (P57113-B21).

HPE ProLiant DL385 Gen11 x16 Low Profile Secondary Riser Kit P59260-B21

Notes:

- Supports one (1) PCIe Gen5 x16 risers at the Secondary riser slot 6.
- Max = 1
- Requires 4LFF rear drive cage (P57113-B21) and NS204i-u boot device (P48183-B21).

HPE ProLiant DL345 Gen11 2 GPU Front FIO Enablement Kit P55068-B21

Notes:

- Supports two (2) PCIe Gen5 x16 risers at the front cage of GPU CTO server.
- Must be selected with GPU CTO server (P54208-B21)
- Max = 1
- This is a factory integrated only option.

HPE ProLiant DL345 Gen11 4 GPU Front FIO Enablement Kit P55067-B21

Notes:

- Supports four (4) PCIe Gen5 x16 risers at the front cage of GPU CTO server.
- Must be selected with GPU CTO server (P54208-B21)
- Max = 1
- This is a factory integrated only option.

Description	Riser position - Primary			Riser position - Secondary			Total Slots	Bus width
	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6		
Default Riser	N/A	N/A	D	N/A	N/A	D	2 FHHL	X16
HPE ProLiant DL345 Gen11 4 PCIe x16 Enablement Kit	O	O	D	N/A	N/A	D	4 FHHL	X16
HPE ProLiant DL345 Gen11 6 PCIe x16 Enablement Kit	O	O	D	O	O	D	6 FHHL	X16
HPE ProLiant DL3x5 Gen11 x16 Primary FIO Riser Kit for LFF Rear Cage	N/A	N/A	O	N/A	N/A	O	1 or 2 FHHL	X16
HPE ProLiant DL3x5 Gen11 x16 Low Profile Secondary Riser Kit	N/A	N/A	N/A	N/A	N/A	O	1 HHHL	X16

Notes: D = Default on server; O = Optional; N/A = not supported or slot/connector not present.

HPE Networking

Notes:

- Requires Performance Fan kit for 100/200 Gigabit Ethernet Adapters or InfiniBand adapters.
- 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: https://www.hpe.com/psnow/doc/A00002507ENW

PCIe Adapters

1 Gigabit Ethernet adapters

Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE P21106-B21

Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE P51178-B21

10 Gigabit Ethernet adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE P26253-B21

Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE P26259-B21

10/25 Gigabit Ethernet adapters

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P26262-B21

Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE P26264-B21

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P08443-B21

Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE P42044-B21

Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE P08458-B21

NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE	S2A69A
100/200 Gigabit Ethernet adapters	
Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE	P73111-B21
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21
NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE	R8M41A
HPE Slingshot SA210S Ethernet 200Gb 1-port PCIe NIC	R4K46A

OCP 3.0 Adapters

1 Gigabit Ethernet OCP adapters	
Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21
10 Gigabit Ethernet OCP Adapters	
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
10/25 Gigabit Ethernet OCP adapters	
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
100/200 Gigabit Ethernet adapters	
Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 OCP3 Adapter for HPE	P73114-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21

Notes: Requires OCP1 upgrade cable kit (P56658-B21) to support PCIe Gen5 x16 bandwidth on OCP21 slot

Recommended System Ambient Temperature – Default riser or 4 PCIe enablement kit

		16SFF/20EDSFF/ 24EDSFF/8LFF		24SFF		12LFF/36EDSFF	
P/N	Description	Slot#1/2/3	Slot#6	Slot#1/2/3	Slot#6	Slot#1/2/3	Slot#6
P31324-B21	HPE IB HDR/EN 200Gb 2p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P10180-B21	MLX MCX623105AS 200GbE 1p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P25960-B21	MLX MCX623106AS 100GbE 2p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
R8M41A	HPE NV60100M 100Gb 2p Strg Offload Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P21112-B21	INT E810 100GbE 2p QSFP28 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P45641-H23	HPE IB NDR 1p OSFP MCX75310AAS Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P45642-H23	HPE IB NDR200 1p OSFP MCX75310AAS Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P23664-B21	HPE IB HDR/EN 200Gb 1p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P65333-B21	HPE IB NDR200 200Gb 2p QSFP112 adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P23666-B21	HPE IB HDR100/EN 100Gb 2p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P23665-B21	HPE IB HDR100/EN 100Gb 1p QSFP56 Adptr	30C	AOC: 27C	30C	AOC: 24C	30C	AOC: Not Supported DAC: 25C
P08458-B21	INT E810 10/25GbE 4p SFP28 Adptr	30C	30C	30C	30C	30C	STD fan: 25C

Recommended System Ambient Temperature – 6 PCIe enablement kit

P/N	Description	16SFF/20EDSFF / 24EDSFF/8LFF		24SFF			12LFF/36EDSFF			
		Slot#5	Slot#6	Slot#4	Slot#5	Slot#6	Slot #1	Slot#4	Slot#5	Slot#6
P31324-B21	HPE IB HDR/EN 200Gb 2p QSFP56 Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P10180-B21	MLX MCX623105AS 200GbE 1p QSFP56 Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P25960-B21	MLX MCX623106AS 100GbE 2p QSFP56 Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
R8M41A	HPE NV60100M 100Gb 2p Strg Offload Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P21112-B21	INT E810 100GbE 2p QSFP28 Adptr	30C	AOC: 25C	30C	30C	AOC: 22C	30C	30C	30C	AOC: Not Supported DAC: 25C
P45641-H23	HPE IB NDR 1p OSFP MCX75310AAS Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P45642-H23	HPE IB NDR200 1p OSFP MCX75310AAS Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P65333-B21	HPE IB NDR200 200Gb 2p QSFP112 adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P23664-B21	HPE IB HDR/EN 200Gb 1p QSFP56 Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P23666-B21	HPE IB HDR100/EN 100Gb 2p QSFP56 Adptr	AOC: 28C	AOC: 25C	AOC: 28C	AOC: 25C	AOC: 22C	AOC: 25C	AOC: 25C	AOC: 25C	AOC: Not Supported DAC: 25C
P23665-B21	HPE IB HDR100/EN 100Gb 1p QSFP56 Adptr	30C	AOC: 25C	30C	30C	AOC: 22C	30C	30C	30C	AOC: Not Supported DAC: 25C
P08458-B21	INT E810 10/25GbE 4p SFP28 Adptr	30C	30C	30C	30C	30C	30C	30C	STD fan: 25C	STD fan: 25C

Suggested System Ambient Temperature – OCP Networking

		16SFF/20EDSFF /24EDSFF/8LFF		24SFF		12LFF/36EDSFF	
P/N	Description	OCP21	OCP22	OCP21	OCP22	OCP21	OCP22
P31323-B21	HPE IB HDR/EN 200Gb 1p QSFP56 OCP3 Adptr	30C	AOC: 25C	AOC: 28C	AOC: 20C	AOC: 25C	Not Supported
P31348-B21	HPE IB HDR/EN 200Gb 2p QSFP56 OCP3 Adptr	30C	AOC: 25C	AOC: 28C	AOC: 20C	AOC: 25C	Not Supported
P22767-B21	INT E810 100GbE 2p QSFP28 OCP3 Adptr	30C	AOC: 25C	30C	AOC: 23C	30C	AOC: Not Supported DAC: 25C
P26269-B21	BCM 57504 10/25GbE 4p SFP28 OCP3 Adptr	30C	30C	30C	AOC+STD fan: 27C	30C	AOC+STD fan: 25C

Notes: Not Supported = configuration not allowed because of thermal limitation.

Accelerators

NVIDIA L4 24GB PCIe Accelerator for HPE S0K89C

Notes:

- This is a PCIe Gen4 x 16 single-width HHHL GPU card.
- This GPU can only be selected with GPU CTO Server.

HPE Storage Options

Emulex Fibre Channel HBAs

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

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

HPE SN1700E 64Gb 1-port Fibre Channel Host Bus Adapter R7N77A

HPE SN1700E 64Gb 2-port Fibre Channel Host Bus Adapter R7N78A

QLogic Fibre Channel HBAs

HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter R2E08A

HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter R2E09A

HPE SN1700Q 64Gb 1-port Fibre Channel Host Bus Adapter R7N86A

HPE SN1700Q 64Gb 2-port Fibre Channel Host Bus Adapter R7N87A

Power and Cooling

Cooling

HPE ProLiant DL3X5 Gen11 1U CPU Performance Heat Sink Kit P58457-B21

HPE ProLiant DL3X5 Gen11 2U Standard Heat Sink Kit P58458-B21

HPE ProLiant DL3X5 Gen11 2U Performance Heat Sink Kit P58459-B21

Notes:

- If processor up to 240W is selected, then Standard Heat Sink (P58458-B21) and Standard Fan Kit (P58464-B21) must be selected.
- If processor more than or equal to 260W is selected, then Performance Heat Sink (P58459-B21) and Performance Fan Kit (P58465-B21) must be selected.
- If processor less than or equal to 300W is selected along with 4LFF or 8SFF mid tray drive cage, then 1U Performance Heat Sink (P58457-B21) and Performance Fan Kit (P58465-B21) must be selected.

HPE ProLiant DL3X5 Gen11 2U Standard Fan Kit P58464-B21

HPE ProLiant DL3X5 Gen11 2U Performance Fan Kit P58465-B21

Notes: Performance Fan Kit (P58462-B21) must be selected if any of the below options are selected

- GPU CTO server (P54208-B21)
- 8SFF/4LFF Midtray drive cage (P57108-B21, P57109-B21, P57112-B21) or Rear drive cage (P57110-B21, P57113-B21)
- 100/200GB network adapters or InfiniBand network adapters

Cooling options summary					
Front Drive Bay	**Mid Tray**	**Rear**	**CPU cTDP**	**Heat Sink**	**Fan Kit**
up to 12LFF/ 24SFF/ 36EDSFF	N/A	N/A	<=240W	Standard	Std Fan
	N/A	N/A	>240W	Performance	Std Fan
	N/A	4LFF or 2SFF	<=240W	Standard	Perf fan
	N/A	4LFF or 2SFF	>240W	Performance	Perf fan
	4LFF or 8SFF	Any	<=300W	1U Performance	Perf fan
GPU CTO server	N/A	N/A	<=240W	Standard	Perf fan
	N/A	N/A	>240W	Performance	Perf fan

Direct Liquid Cooling Options

HPE ProLiant DL325/DL345 Gen11 Direct Liquid Cooling Cold Plate Module FIO Kit from PCIe	P80871-B21
HPE ProLiant DL325/DL345 Gen11 Direct Liquid Cooling Cold Plate Module FIO Kit from NS204i-u	P80876-B21
HPE ProLiant DL3XX Gen11 Direct Liquid Cooling 55cm Quick Disconnect Tube Set FIO Kit	P62042-B21
HPE ProLiant Direct Liquid Cooling 450mm Female-Male Connection Quick Disconnect Tube Set FIO Kit	P62046-B21

Notes:

- Seven (7) performance fan kits are required with the direct liquid cooling kit.
- When configured as the direct liquid cooling system, the server can only be shipped to the customer as the whole rack. Racks below are allowed in the configuration:
  - Rack 42U 800mm x 1200mm Ent G2
  - Rack 48U 800mm x 1200mm Ent G2

CTO Server	QD Tube Kit
HPE ProLiant DL3XX Gen11 Direct Liquid Cooling 55cm Quick Disconnect Tube Set FIO Kit	P62042-B21
HPE ProLiant Direct Liquid Cooling 450mm Female-Male Connection Quick Disconnect Tube Set FIO Kit	P62046-B21

Power Supplies

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, and tool-less installation into HPE ProLiant Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

Notes:

- Select a minimum (1), maximum (2) power supplies
- All power supplies in a server should match. Mixing Power Supplies is not supported.
- 1600W Power supplies only support high line voltage (200VAC to 240VAC).
- Before making a power supply selection it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: https://poweradvisorext.it.hpe.com/?Page=Index
- HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Visit HPE Power Cords and Cables for a full list of optional power cords

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38995-B21
HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit	P03178-B21
HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit	P17023-B21

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38997-B21
HPE 1800W-2200W Flex Slot Titanium Hot Plug Power Supply Kit	P44712-B21
HPE 1600W -48VDC Power Cable Lug Kit	P36877-B21

Notes: Must be selected along with HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit (P17023-B21)

HPE Security

HPE Trusted Supply Chain for HPE ProLiant P36394-B21

Notes:

- HPE Trusted Supply Chain is an optional security upgrade intended for agencies and regulated industries needing enhanced security and compliance needs. Applying this option to a DL345 Gen11 CTO server ensures it is built in the USA in a secured facility by vetted HPE personnel assigned to the manufacturing processes. A multitude of checkpoints/inspections for malicious microcode and counterfeit parts are performed throughout the server build, and additional safeguards are put in place against cyber-exploits throughout the server lifecycle. Learn more at http://www.hpe.com/security
- This option requires the selection of HPE Gen11 Intrusion Detection Kit (P48922-B21)
- This option requires the selection of either HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features (BD505A) or HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features (512485-B21)
- This option is limited to stand-alone DL345Gen11 CTO servers only. The HPE Trusted Supply Chain configuration will not be available if the server is ordered as factory integrated into a rack
- One instance of the following Electronic License to Use is required per order (not per server): R6X85AAE (HPE Trusted Supply Chain E-LTU)
- This option cannot be selected with TAA instruction SKU or TAA CTO Models.

HPE ProLiant DL385 Gen11 Intrusion Cable Kit P55713-B21

Notes: This provides a physical connection from the chassis board and hood and detects any physical intrusion into the chassis, providing security during the entire supply chain process of shipping, receiving distribution, and operation.

HPE Bezel Lock Kit 875519-B21

Notes: The Bezel lock kit (875519-B21) must be selected along with the bezel kit (P50400-B21).

HPE Gen11 2U Bezel Kit P50400-B21

HPE iLO Common Password FIO Setting P08040-B21

Notes:

- Replaces iLO default randomized password by an HPE defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

Additional Cable Options

HPE ProLiant DL3X5 Gen11 OCP1 Upgrade Cable Kit	P56658-B21

Notes: Supports PCIe x16 bandwidth at OCP slot 21. Required if one of the following options is in the order

- OCP InfiniBand network adapters (P31323-B21, P31348-B21)
- BCM 57504 10/25GbE 4p SFP28 Adaptor (P26269-B21)
- Intel E810 100GbE 2p QSFP28 OCP3 Adptr (P22767-B21)

HPE ProLiant DL3X5 Serial Port Enablement Kit	P50887-B21

Notes: This cable kit supports an optional serial port at the rear of the server.

Software as a Service Management

HPE Compute Ops Management

HPE Compute Ops Management Standard 3-year Upfront ProLiant SaaS	R7A11AAE
HPE Compute Ops Management Standard 5-year Upfront ProLiant SaaS	R7A12AAE
HPE Compute Cloud Management Server FIO Enablement	S1A05A
HPE Compute Ops Management Standard 7-year Upfront ProLiant SaaS	S2E10AAE
HPE Compute Ops Management Advanced 1-year Upfront ProLiant SaaS	S5E58AAE
HPE Compute Ops Management Advanced 3-year Upfront ProLiant SaaS	S5E59AAE
HPE Compute Ops Management Advanced 5-year Upfront ProLiant SaaS	S5E60AAE
HPE Compute Ops Management Advanced 7-year Upfront ProLiant SaaS	S5E61AAE

Rail Kits

Easy Install rail kits contain telescoping rails which allow for in-rack serviceability.
To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative.

Notes:

- HPE rail kits are designed to work with HPE racks in compliance with industry standard EIA-310-E. In the event a customer elects to purchase a third-party rack for use with an HPE rail kit, any such use is at customer's own risk. HPE makes no express or implied warranties with respect to such third-party racks and specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. Furthermore, HPE has no obligation and assumes no liability for the materials, design, specifications, installation, safety, and compatibility of any such third-party racks with any rail kits, including HPE rail kits.
- 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 the number of people to use for any installation.

HPE DL3XX Gen11 Easy Install Rail 2 Kit P52351-B21

Notes: This Rail kit can be selected with 8LFF/8SFF/24SFF/EDSFF CTO server.

HPE Ball Bearing Rail 8 Kit P52345-B21

Notes: This Rail kit can be selected with GPU CTO server.

HPE DL38X Gen10 Plus 2U Cable Management Arm for Rail Kit P22020-B21

Notes: CMA can be selected only with the Rail kit.

Broadcom BCM57608 Ethernet 100Gb 2-port QSFP112 Adapter for HPE P73111-B21

HPE ProLiant Compute DL3XX Gen12 2U Cable Management Arm for Rail Kit P70744-B21

HPE Tape Backup

For the complete range of tape drives, autoloaders, libraries and media see:
https://www.hpe.com/us/en/storage/storeever-tape-storage.html

For hardware and software compatibility of Hewlett Packard Enterprise tape backup products please visit the StoreEver Tape Solutions in SPOCK (requires registration/login) https://h20272.www2.hpe.com/SPOCK/default.aspx

Only external drives supported
All libraries and autoloaders supported via compatible FC or SAS controller. Refer to the StoreEver Tape Solutions Compatibilty Matrix link above

HPE Racks

- Please see the HPE Advanced Series Racks QuickSpecs for information on additional racks options and rack specifications. HPE G2 Advanced Series Racks
- Please see the HPE Enterprise Series Racks QuickSpecs for information on additional racks options and rack specifications. HPE G2 Enterprise Series Racks

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.

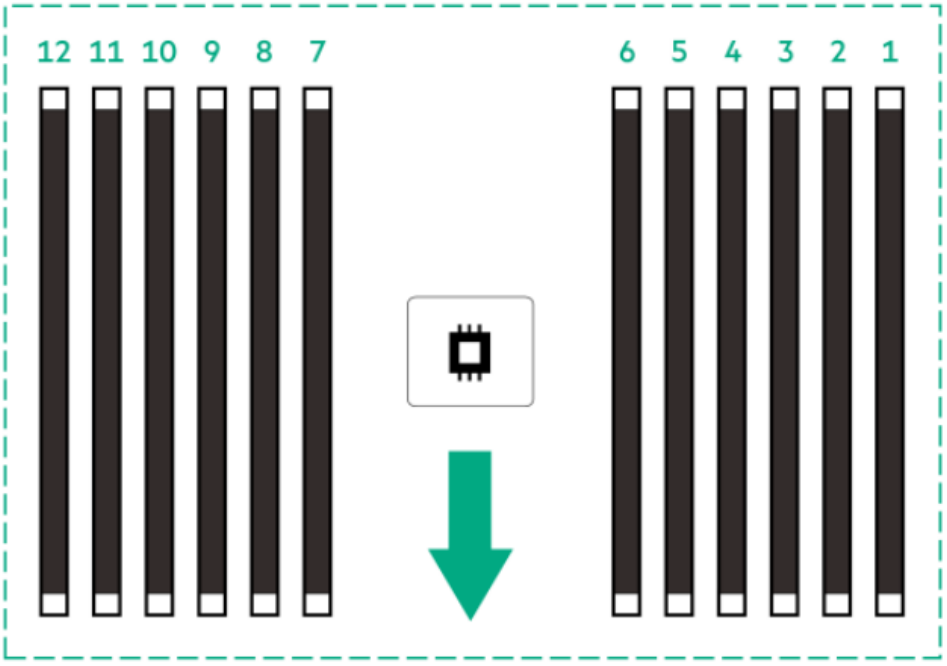
HPE Rack Options

- Please see the HPE KVM Switches web page for information on these products and their specifications

HPE Support Services

Tech Care

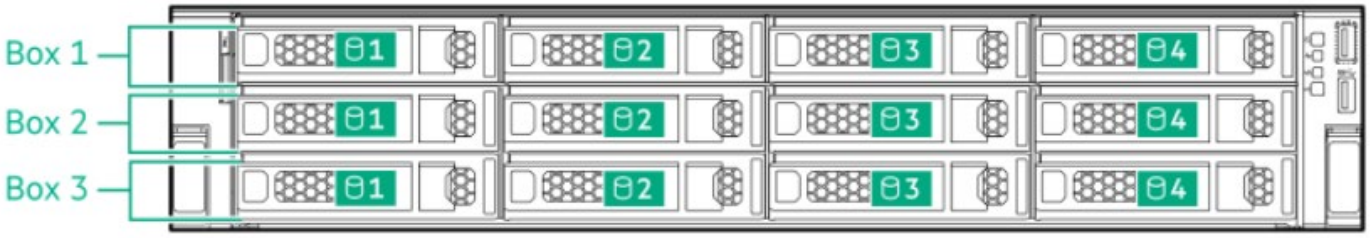
HPE 3 Year Tech Care Essential DL345 Gen11 Service	H78X5E
HPE 3 Year Tech Care Essential wDMR DL345 Gen11 Service	H78X6E
HPE 5 Year Tech Care Essential DL345 Gen11 Service	H78Z9E
HPE 5 Year Tech Care Essential wDMR DL345 Gen11 Service	H79A0E



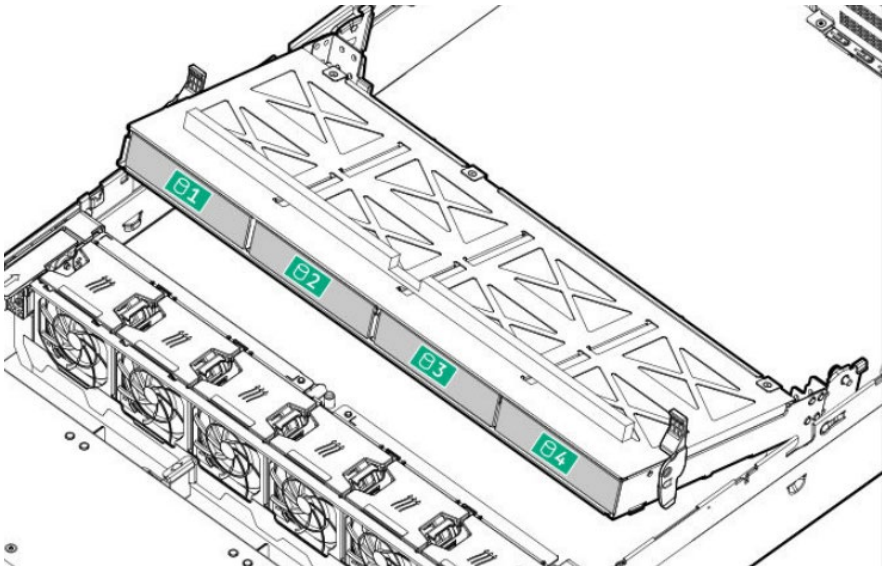
The arrow points to the front of the server

General Memory Population Rules and Guidelines:

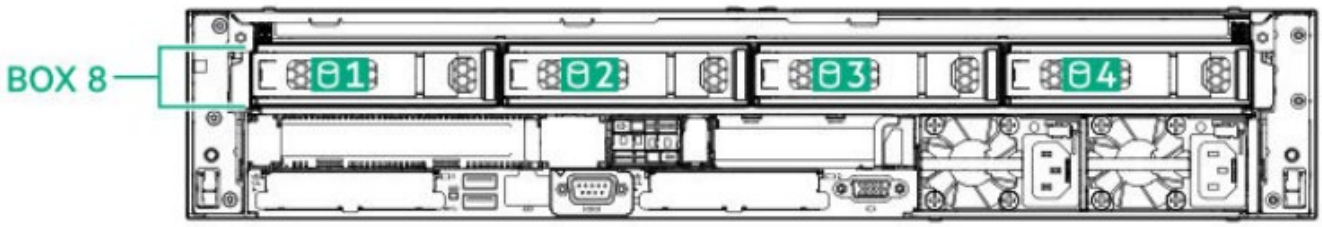
- Install DIMMs only after the corresponding processor is installed.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum 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.
- To realize the performance memory capabilities listed in this document, HPE DDR5 Smart Memory is required. For additional information, please see the: HPE DDR5 Smart Memory QuickSpecs
- For details on the Memory Population Rules and Guidelines with AMD EPYC 9004 and 9005 series processors, please go to: https://www.hpe.com/psnow/doc/a50007481enw



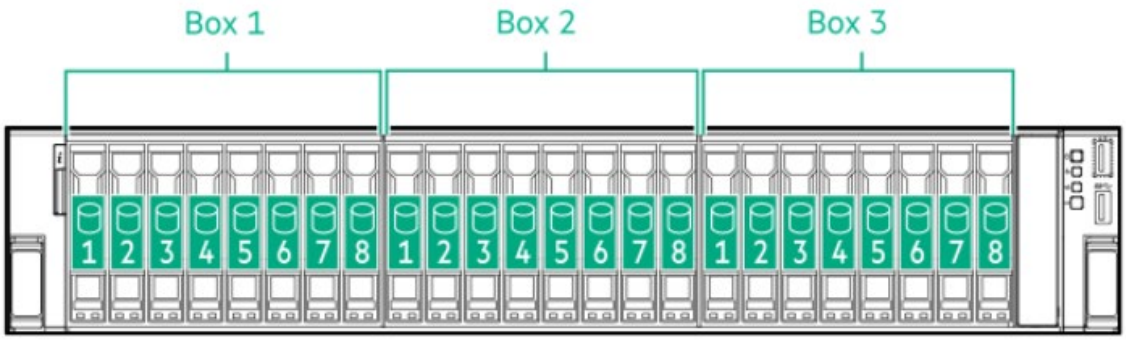
12 LFF Front



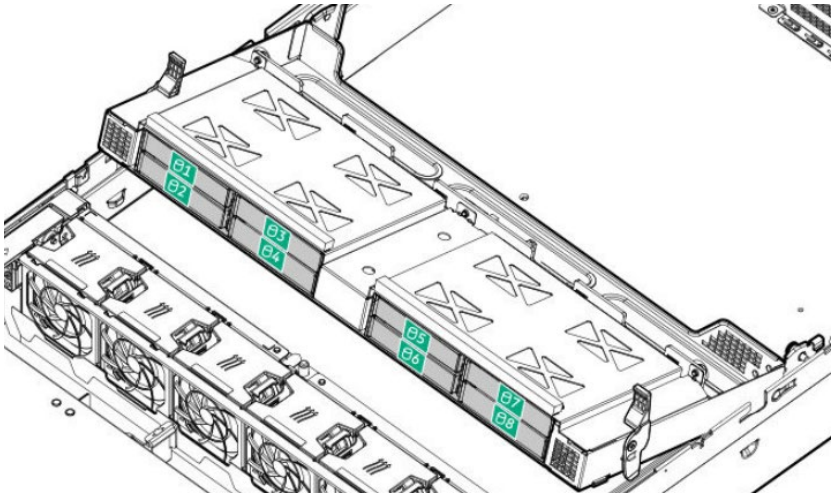
4 LFF Mid Tray



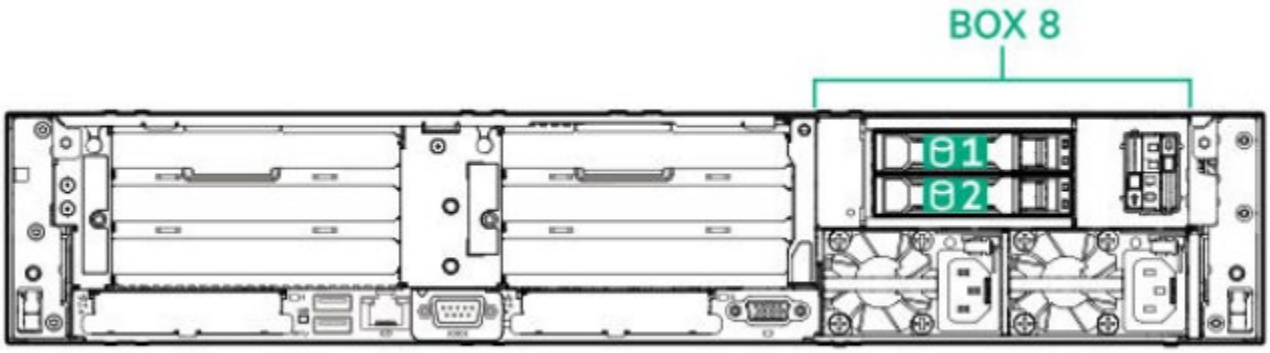
Rear Panel + 4 LFF drives



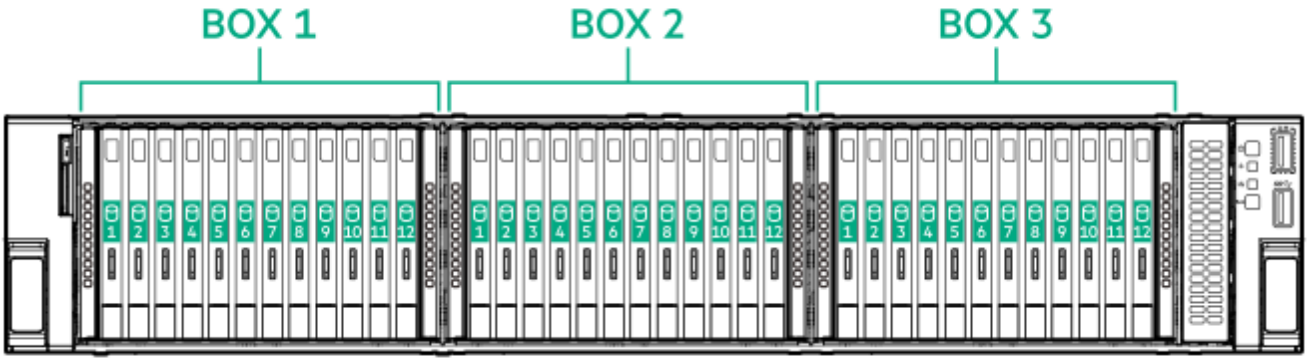
24 SFF Front



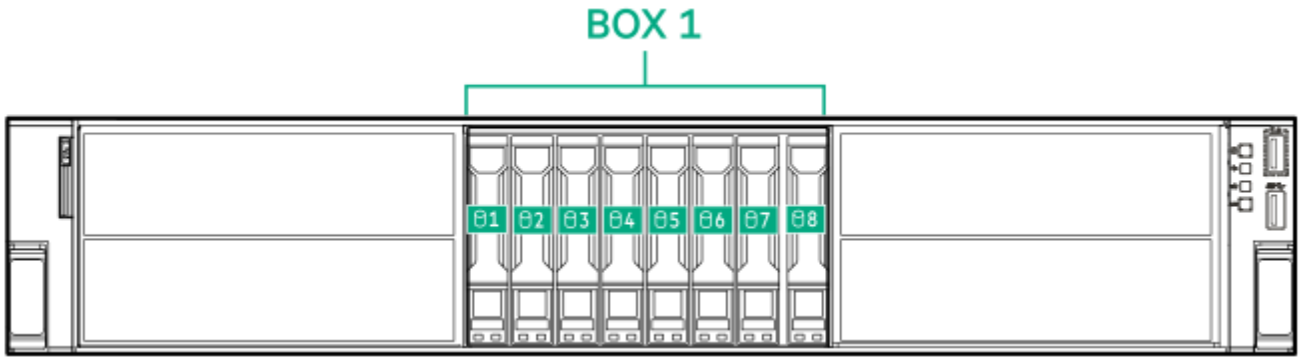
8 SFF Mid Tray



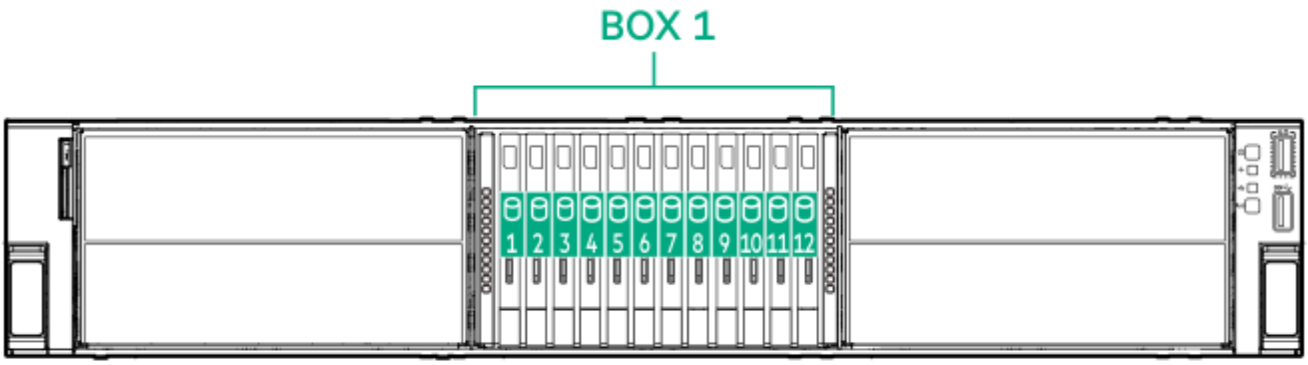
Rear Panel + rear 2 SFF drives



36 EDSFF E3.S 1T Drives



8 SFF Drives in GPU CTO server



12 EDSFF Drives in GPU CTO server

System Unit

Dimensions (Height x Width x Depth)

- **8SFF, 24SFF and EDSFF chassis**
  8.75 x 44.8 x 64.6 cm
  3.45 x 17.64 x 25.45 in
- **8LFF chassis:**
  8.75 x 44.8 x 66.3 cm
  3.45 x 17.64 x 26.11 in
- **GPU Chassis:**
  8.75 x 44.8 x 79.87 cm
  3.45 x 17.64 x 31.44 in
- **Package:**
  27 x 60 x 91.77 cm
  10.63 x 23.62 x 36.13 in

Weight (approximate)

- 8SFF chassis:
  - Minimum: 8 SFF chassis with 0 drives, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, 1 Smart Array controller, and 6 standard fans.
    - 16.04 kg
    - 35.36 lb.
  - Maximum: 8 SFF chassis with 8 drives (no mid/rear drive), 1 processor, 2 power supply, 1 standard heatsink, 12 DIMM, 1 Smart Array controller, and 6 standard fans.
    - 18.83 kg
    - 41.51 lb.
  - Package
    - 4.175kg
    - 9.204 lb.
- 8LFF chassis:
  - Minimum: 8 LFF chassis with 0 drives, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, 1 Smart Array controller, and 6 standard fans.
    - 16.97 kg
    - 37.41 lb.
  - Maximum: 8 LFF chassis with 8 drives (no mid/rear drive), 1 processor, 2 power supply, 1 standard heatsink, 12 DIMM, 1 Smart Array controller, and 6 standard fans.
    - 23.95 kg
    - 52.81 lb.
  - Package
    - 4.240 kg
    - 9.347 lb.

- EDSFF chassis:
  - Minimum: EDSFF chassis with 1 drives, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, and 6 standard fans.
    - 16.13 kg
    - 35.56 lb.
  - Maximum: EDSFF chassis with 36 drives, 1 processor, 2 power supply, 1 performance heatsink, 12 DIMM, and 6 performance fans.
    - 24.87 kg
    - 54.83 lb.
- GPU chassis:
  - Minimum: GPU chassis with 1 single-width accelerator, 1 EDSFF drives, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, and 6 standard fans.
    - 16.97 kg
    - 37.41 lb.
  - Maximum: GPU chassis with 2 double-width accelerators, 12 EDSFF drives, 1 processor, 2 power supply, 1 performance heatsink, 12 DIMM, and 6 performance fans.
    - 27.12 kg
    - 59.79 lb.

Input Requirements (per power supply)

Rated Line Voltage

- 100 to 120 VAC
- 200 to 240 VAC

BTU Rating

Maximum

- For 1600W Power Supply: 5918 BTU/hr. (at 200 VAC), 5884 BTU/hr. (at 240 VAC) for China
- For 800W Power Supply: 3207 BTU/hr. (at 100 VAC), 3071 BTU/hr. (at 200 VAC), 3112 BTU/hr. (at 240 VAC) for China Only
- For 500W Power Supply: 1979 BTU/hr. (at 100 VAC), 1911 BTU/hr. (at 200 VAC), 1965 BTU/hr. (at 240 VAC) for China Only

Power Supply Output (per power supply)

Rated Steady-State Power

- For 1600W Power Supply: 1600W (at 240 VAC), 1600W (at 240 VAC)
- For 800W Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VAC) input for China only
- For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only

Maximum Peak Power

- For 1600W Power Supply: 1600W (at 200 to 240 1VAC), 1600W (at 240 VAC) input for China only
- For 800W Power Supply: 800W (at 100 to 127 VAC), 800W (at 200 to 240 1VAC), 800W (at 240 VAC) input for China only
- For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), and 500W (at 240 VAC) input for China only

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. The 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.).

Relative Humidity

- **Operating**
  8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
- **Non-operating (non-condensing)**
  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. The 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).

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

Acoustic Noise

Listed are the declared mean A-Weighted sound power levels (LwAm), declared average bystander position A-Weighted sound pressure levels (LpAm), and the statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LwA,m 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.

Idle	
LWA,m	5.5 B Base
LpAm	41 dBA Base
Kv	0.4 B Base
Operating	
LWA,m	5.6 B Base
LpAm	42 dBA Base
Kv	0.4 B Base

Notes:

- The declared mean A-weighted sound power level, LWA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample, rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m, and Kv.

- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- System under abnormal conditions may increase the noise level, persons in the vicinity of the product [cabinet] for extended periods should consider wearing hearing protection or using other means to reduce noise exposure.

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 European Union Waste Electrical and Electronic Equipment Directive [EU WEEE] (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 website. 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-Jun-2026	Version 39	Changed	Pre-Configured Models and Core Options sections were updated.
		Added	Read Intensive – NVMe - EDSFF E3.S 1T Mixed Use - NVMe – EDSFF E3.S 1T SED (Self-Encryption Drive) – NVMe – EDSFF E3.S 1T
		Removed	BTO obsolete SKUs. Read Intensive - 6G SATA – SFF
04-May-2026	Version 38	Changed	Core Options section was updated
		Added	Read Intensive – NVMe - EDSFF E3.S 1T, Mixed Use - NVMe – EDSFF E3.S 1T, and SED (Self-Encryption Drive) – NVMe – EDSFF E3.S 1T
		Removed	Read Intensive - M.2 - Solid State Drives obsolete SKU.
06-Apr-2026	Version 37	Changed	Core Options section was updated.
		Added	Memory FIO rules, Read Intensive - NVMe – SFF, Mixed Use - NVMe – SFF, and Mixed Use - NVMe – EDSFF E3.S 1T SKUs.
		Removed	DDR5-4800 (applies to the 4th Generation AMD® EPYC® Processors) and HPE InfiniBand obsolete SKUs.
02-Mar-2026	Version 36	Changed	Service and Support and Core Options sections were updated.
		Added	Updated GreenLake statement.
		Removed	HPE InfiniBand and NVIDIA accelerator obsolete SKUs.
02-Feb-2026	Version 35	Changed	Pre-Configured Models and Core Options sections were updated.
		Added	Direct Liquid Cooling Options
		Removed	DDR5-4800 (applies to the 4th Generation AMD® EPYC® Processors), Read Intensive - NVMe – SFF, Midline - 12G SAS - LFF Drives, Midline - 6G SATA - LFF Drives, Read Intensive - M.2 - Solid State Drives, and HPE InfiniBand obsolete SKUs.
03-Nov-2025	Version 34	Changed	Core Options section was updated.
		Added	Read Intensive - NVMe – SFF SKUs.
		Removed	4th Generation AMD EPYC Processor, HPE InfiniBand OBS SKUs.
07-Jul-2025	Version 33	Changed	Core Options section was updated. Added: Boot Controller SKUs.
02-Jun-2025	Version 32	Changed	Additional Options section was updated. Update in naming of RDIMMs and SaaS SKUs.
05-May-2025	Version 31	Changed	Core Options section was updated. Added: Very Read Optimized – NVMe – EDSFF E3.S 1T, Read Intensive - 6G SATA - M.2 - Solid State Drives, OCP Adapters and Rail Kits SKUs and European Union ErP Lot 9 Regulation section to include Turkey and Ireland.
07-Apr-2025	Version 30	Changed	Additional Options section was updated. Added: NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting SKU, COM Advanced SKUs and QuickSpecs Survey.
18-Mar-2025	Version 29	Changed	Standard Features section was updated. (AMD EPYC 9xx5 series now support 6400MT/s DIMM speed).
03-Mar-2025	Version 28	Changed	Overview, Standard Features and Additional Options sections were updated.
06-Jan-2025	Version 27	Changed	Core Options section was updated.

Summary of Changes

Date	Version History	Action	Description of Change
02-Dec-2024	Version 26	Changed	Core Options and Additional Options sections were updated. (OBS SKUs were removed)
04-Nov-2024	Version 25	Changed	Standard Features and Core Options sections were updated.
10-Oct-2024	Version 24	Changed	Overview, Standard Features and Core Options sections were updated.
26-Sep-2024	Version 23	Changed	Standard Features (Operating Systems and Virtualization Software Support for HPE Servers)
05-Aug-2024	Version 22	Changed	Standard Features and Core Options sections were updated.
15-Jul-2024	Version 21	Changed	Pre-Configured Models section was updated.
01-Jul-2024	Version 20	Changed	Core Options section was updated.
03-Jun-2024	Version 19	Changed	Pre-Configured Models and Core Options sections were updated.
20-May-2024	Version 18	Changed	Core Options section was updated.
15-Apr-2024	Version 17	Changed	Pre-Configured Models section was updated.
01-Apr-2024	Version 16	Changed	Standard Features, Core Options and Additional Options sections were updated.
04-Mar-2024	Version 15	Changed	Standard Features, Pre-Configured Models, Core Options and Additional Options sections were updated
04-Dec-2023	Version 14	Changed	Standard Features, Service and Support, Pre-Configured Models, Configuration Information, and Core Options sections were updated.
02-Oct-2023	Version 13	Changed	Overview, Standard Features and Core Options sections were updated
05-Sep-2023	Version 12	Changed	Standard Features, Pre-configured Models, Configuration Information, and Core Options sections were updated.
07-Aug-2023	Version 11	Changed	Overview, Standard Features, Pre-Configured Models, Configuration Information, Core Options, Additional Options, Storage, and Technical Specifications sections were updated
10-Jul-2023	Version 10	Changed	Overview, Standard Features, Service and Support, Pre-Configured Models, Configuration Information, Core Options and Memory sections were updated
13-Jun-2023	Version 9	Changed	Overview, Standard Features, Service and Support, Pre-Configured Models, Configuration Information and Core Options sections were updated
01-May-2023	Version 8	Changed	Standard Features and Core Options sections were updated.
17-Apr-2023	Version 7	Changed	Overview and Core Options sections were updated.
03-Apr-2023	Version 6	Changed	Overview, Standard Features, Service and Support, Pre-configured Models, Configuration Information, Core Options, Additional Options Storage, Memory and Technical Specifications sections were updated.
06-Mar-2023	Version 5	Changed	Overview, Standard Features, Configuration Information, additional Options and Technical Specifications sections were updated.
06-Feb-2023	Version 4	Changed	Overview, Standard Features, Configuration Information, additional Options and Technical Specifications sections were updated.
19-Dec-2022	Version 3	Changed	Standard Features and Configuration information sections were updated.
05-Dec-2022	Version 2	Changed	All sections were updated.
10-Nov-2022	Version 1	New	New QuickSpecs.

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