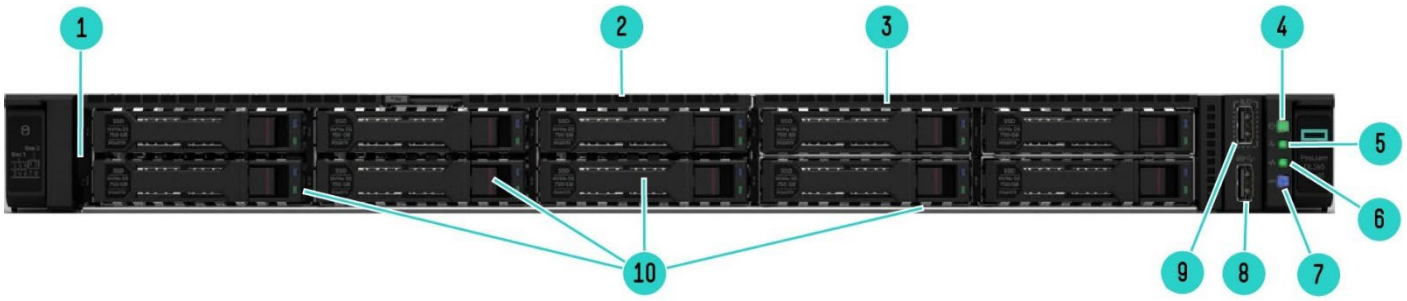
Overview

HPE ProLiant DL325 Gen11

Are you looking for a scalable, low-cost performance server solution for your virtualized and software-defined compute workloads? The HPE ProLiant DL325 Gen11 server is a low-cost 1U 1P solution that delivers exceptional value balancing compute, memory, and network bandwidth 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, and supporting up to 2 double-width GPUs at the front, this server is a superb low-cost, 1U 1P, performance solution for your virtualized workloads. The silicon root of trust anchors the server firmware, creating a fingerprint for the AMD Secure Processor that must be matched exactly before the server boot. The HPE ProLiant DL325 Gen11 server is an excellent choice for virtualized workloads such as software-defined compute, CDN, VDI, and secure edge apps that require balancing processor, memory, and network bandwidth.



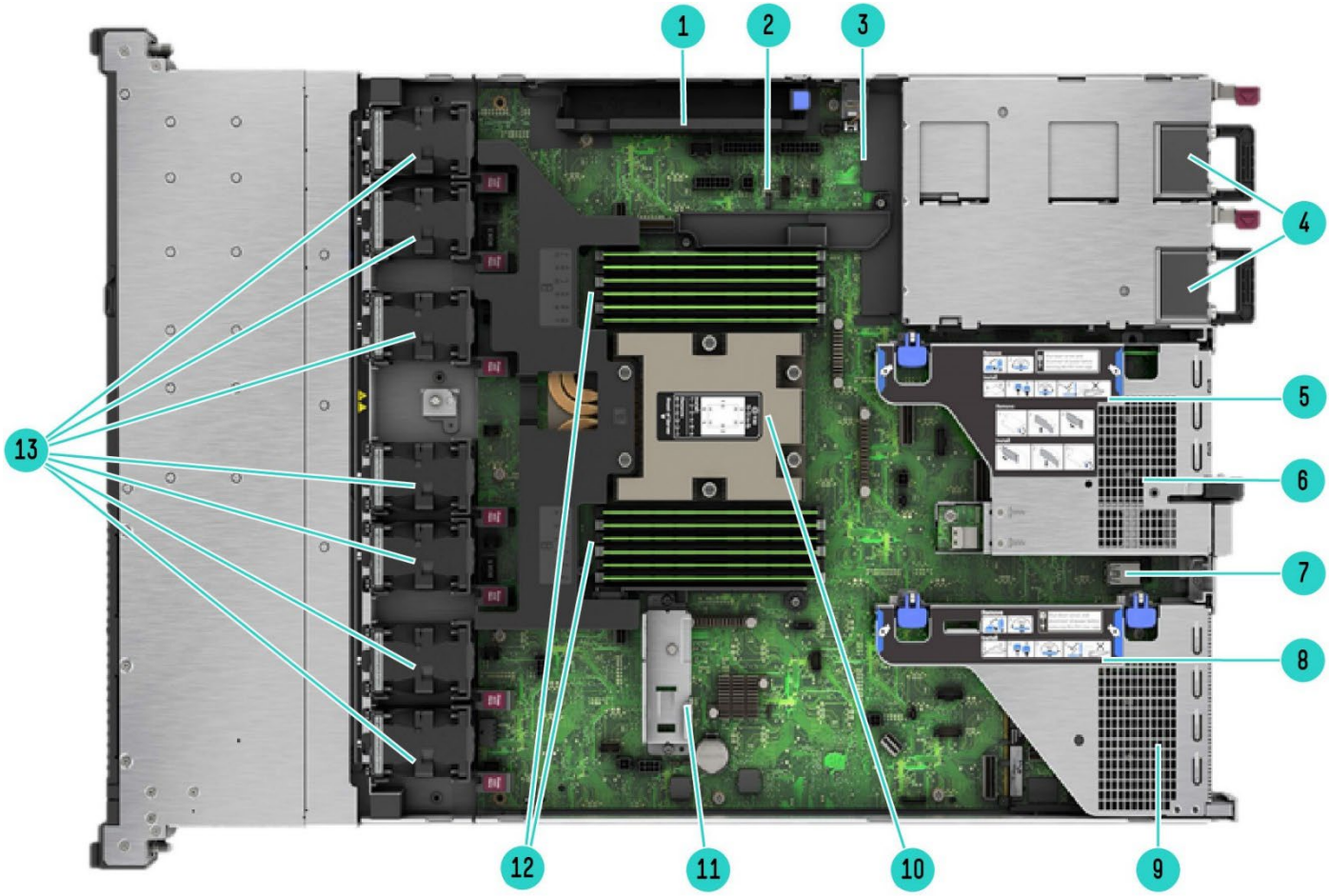
Front View - 8 SFF + optional 2 SFF Drive Bay shown

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

Notes:

- [1] Optional: Optical Drives
- [2] Front NIC LED display doesn't support NIC LED ACT/LINK indication from PCIE NIC's

Overview



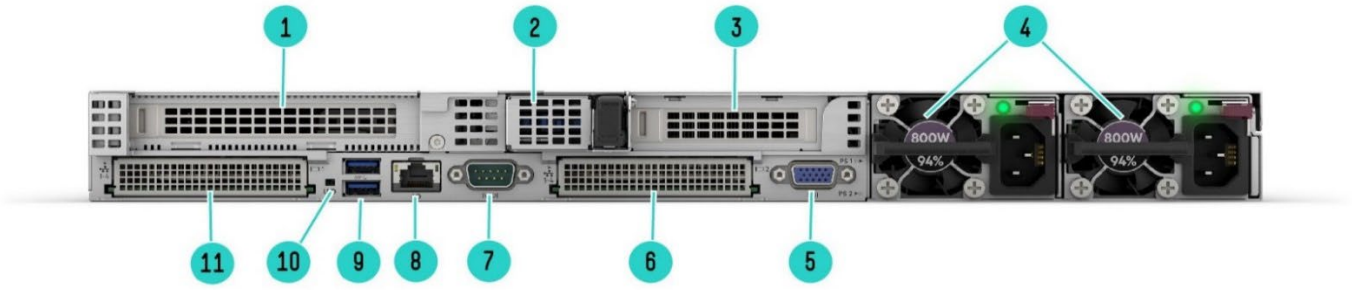
Internal View – Standard for all HPE ProLiant DL325 Gen 11

1. Megacell battery holder
2. Hard drive backplane power connectors
3. Chassis intrusion detection connector
4. Up to 2 Hot Plug redundant HPE Flexible Slot Power supplies
5. Secondary PCIe 5.0 riser
6. OCP 3.0 Slot 22 (Under)
7. Internal Dual USB 3.2 Gen1 port
8. Primary PCIe 5.0 riser
9. OCP 3.0 Slot 21 (Under)
10. Processor is shown with Performance heat sink[1] (Up to 1)
11. FHFL PCIe card holder
12. DDR5 DIMM slots[2]
13. Hot-plug fans[3]

Notes:

- [1]Optional: Standard Heat Sink and Closed-Loop Liquid Cooling Heat Sink
- [2]Fully populated 12 DIMMs shown.
- [3]7 dual-rotor standard fans shown. Optional: Performance Fans and Liquid Cooling Fans

Overview



Rear View – Secondary Low Profile Riser Shown

1. Slot 1 Primary PCIe 5.0 Riser
2. Optional NS204i-u hot-plug NVMe boot device
3. Slot 2 Secondary PCIe 5.0 Riser[1]
4. Hot-plug Power Supply 1 and 2[2]
5. Video (VGA) port
6. OCP 3.0 Slot 22
7. Optional Serial port
8. Dedicated iLO management port
9. USB 3.1 Gen1 Ports (2)
10. Unit ID LED
11. OCP 3.0 Slot 21

Notes:

– [1]Low profile and full height options

– [2]Hot-plug Power Supply 2 is optional

What's New

- All new DL325 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 6000MT/s.
- New PCIe Gen5 support.
- New HPE Integrated Lights-Out 6 (iLO 6) server management software.
- New hot-pluggable NS204i-u Boot Device.
- New 20 EDSFF E3.S 1T Drive bays.
- 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

- 1U rack

Chassis Types

- 8 SFF with optional 2 SFF drive bay or optical drive.
- 4 LFF with an optional optical drive
- 20 EDSFF E3.S 1T drive bay.
- 2 Single-Width or 2 Double-Width GPUs with 8 EDSFF or 4 SFF drive bay.

System Fans

- Choice of Standard Fan Kit, Performance Fan, and Liquid cooling Fan Kit

Notes:

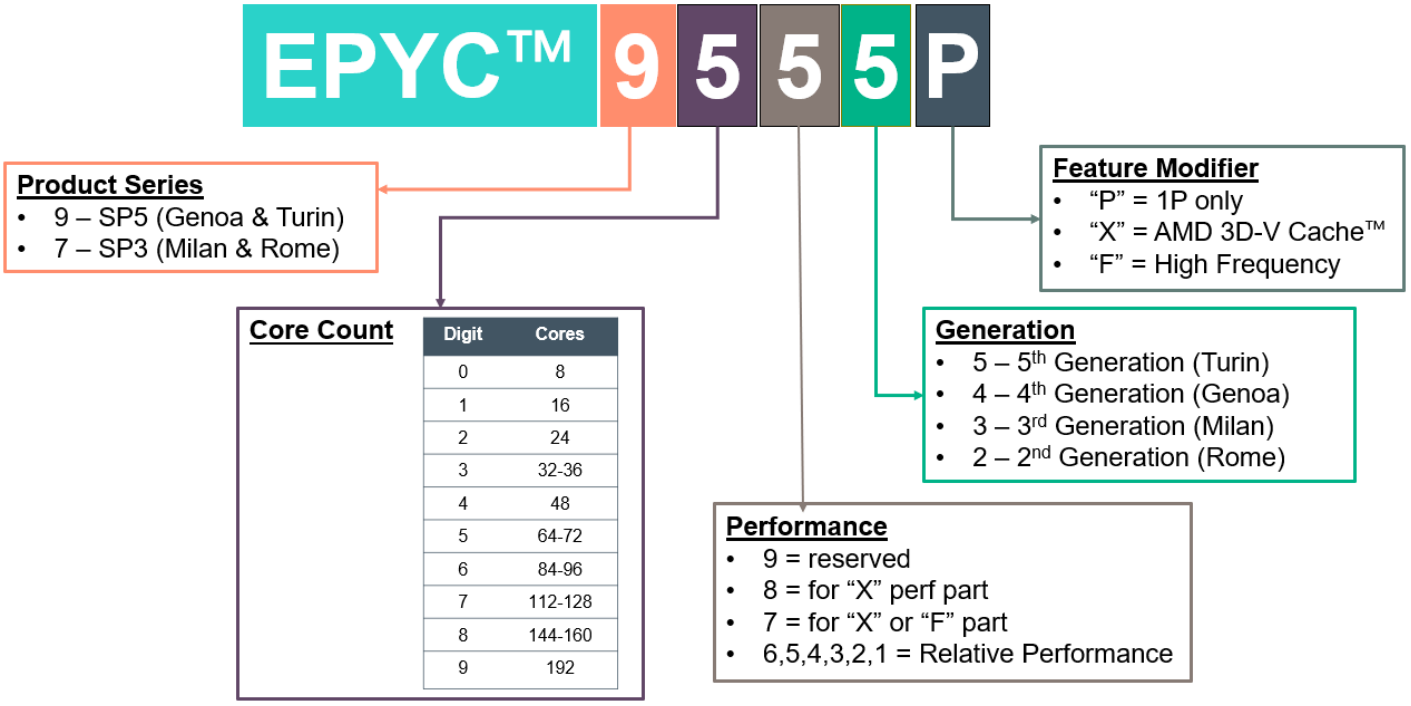
– The DL325 Gen11 supports up to 7 fans with fan redundancy built in. One fan rotor failure will place the server in degraded mode but fully functional. Two fan rotor failures could provide a warning and imminent server shutdown.

– Each Fan kit is designated to operate under different configurations. Please refer to the cooling option message in the unique option section for more information.

Standard Features

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-server-cpu-family



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	3TB	390	320	6000MT/s
EPYC 9825	144	2.2 GHz	3.7 GHz	3TB	390	384	6000MT/s
EPYC 9745	128	2.4 GHz	3.7 GHz	3TB	400	256	6000MT/s
EPYC 9645	96	2.3 GHz	3.7 GHz	3TB	320	256	6000MT/s
EPYC 9655P	96	2.6 GHz	4.5 GHz	3TB	400	384	6000MT/s
EPYC 9565	72	3.15 GHz	4.3 GHz	3TB	400	384	6000MT/s
EPYC 9535	64	2.4 GHz	4.3 GHz	3TB	300	256	6000MT/s
EPYC 9575F	64	3.3 GHz	5 GHz	3TB	400	256	6000MT/s
EPYC 9555P	64	3.2 GHz	4.4 GHz	3TB	360	256	6000MT/s
EPYC 9475F	48	3.65 GHz	4.8 GHz	3TB	400	256	6000MT/s
EPYC 9455P	48	3.15 GHz	4.4 GHz	3TB	300	256	6000MT/s
EPYC 9365	36	3.4 GHz	4.3 GHz	3TB	300	192	6000MT/s
EPYC 9335	32	3 GHz	4.4 GHz	3TB	210	128	6000MT/s
EPYC 9375F	32	3.8 GHz	4.8 GHz	3TB	320	256	6000MT/s
EPYC 9355P	32	3.55 GHz	4.4 GHz	3TB	280	256	6000MT/s
EPYC 9255	24	3.25 GHz	4.3 GHz	3TB	200	128	6000MT/s
EPYC 9275F	24	4.1 GHz	4.8 GHz	3TB	320	256	6000MT/s
EPYC 9135	16	3.65 GHz	4.3 GHz	3TB	200	64	6000MT/s
EPYC 9115	16	2.6 GHz	4.1 GHz	3TB	125	64	6000MT/s
EPYC 9175F	16	4.2 GHz	5 GHz	3TB	320	512	6000MT/s
EPYC 9015	8	3.6 GHz	4.1 GHz	3TB	125	64	6000MT/s

Standard Features

4th Gen AMD EPYC Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage	L3 Cache (MB)	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 @ 6000 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 and 9005 series processors, see details here: **https://www.hpe.com/psnow/doc/a50007481enw**

Standard Features

Memory Protection

Advanced ECC

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

Online Spare

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

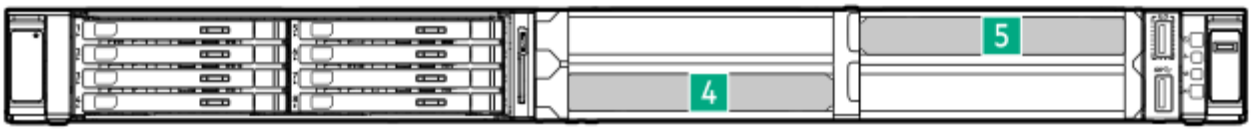
Notes: For more information see our **Memory RAS feature technical whitepaper**.

Expansion Slots

Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
1 (Default Primary Riser)	PCIe 5.0	X16	X16	Full-height, Full-length slot
2 (Secondary Riser)	PCIe 5.0	X16	X16	Low Profile or Full-height, Half-length slot
21	PCIe 5.0	X8	X16	OCP 3.0
22	PCIe 5.0	X8	X16	OCP 3.0

Notes:

- Both OCP slots (slot 21 and 22) support shared NIC and WOL (wake on LAN) functions.
- If NS204i-u Boot Device is selected then low profile secondary riser (P55029-B21) must be selected.
- Requires a FHFL card holder to support the full-length cards at primary riser.



Front risers of GPU CTO server

Front Riser				
Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
4	PCIe 5.0	X16	X16	Full-height, Full-length slot
5	PCIe 5.0	X16	X16	Full-height, Full-length slot

Notes:

- When supporting Slot4 & Slot21 scenario, Slot4 & OCP 21 slot combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot5 & Slot1 scenario, Slot 5 & Slot1 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:

- Can only be selected without M.2 enablement kit.
- Includes Hot Plug capable dual 480GB NVMe M.2 automatically configured into a RAID 1 Mirror

Standard Features

– Externally accessible but does not occupy a PCIe slot
– Requires specific cable kit and secondary low-profile riser 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 4LFF CTO Servers as an option (DVD-ROM or DVD-RW)

Drives

- None ship standard

Maximum Storage		
	Capacity	**Configuration**
Hot Plug LFF SAS HDD	80 TB	4 x 20 TB
Hot Plug LFF SATA HDD	80 TB	4 x 20 TB
Hot Plug SFF SAS SSD	76.8 TB	10 x 7.68 TB
Hot Plug SFF SATA SSD	76.8 TB	10 x 7.68 TB
Hot Plug SFF NVMe PCIe U.3 SSD	153.6 TB	10 x 15.36 TB
Hot Plug EDSFF E3.S 1T NVMe SSD	307.2 TB	20 x 15.36 TB
M.2 22110 NVMe SSD	3.84 TB	2 x 1.92 TB (via M.2 enablement Kit)
M.2 2280 SATA SSD	960 GB	2 x 480 GB (via M.2 enablement Kit)

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 arrange of NIC adapters BTO models will come pre-selected with a primary networking card.
HPE iLO Remote Mgmt Port	1 1Gb Dedicated - rear
Front iLO Service Port	1 standard
USB 3.2 Gen1	5 standard on all models: 1 front, 2 rear, 2 internal

Standard Features

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

Standard Features

- 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 at **https://support.hpe.com/hpesc/public/docDisplay?docId=c04465280&docLocale=en_US**

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 Support**

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

Standard Features

- 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 the DL325 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.**

Standard Features

HPE GreenLake for Compute Ops Management

HPE is intelligently transforming compute management with an intuitive cloud operating experience through HPE GreenLake cloud platform to streamline and secure operations from edge-to-cloud. Automated key lifecycle tasks, for onboarding, updating, managing, and monitoring HPE servers, brings agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface. Manage single locations or multiple, distributed sites. Keep tens to thousands of servers secure with batch policy controls and automated updates.

Compute Ops Management is cloud-native software that is continually updated with new services, features, patches, and fixes. The management application resides in the HPE GreenLake cloud platform (access via **https://console.greenlake.hpe.com**) and leverages the HPE GreenLake architecture, security, and unified operations.

A 3-year subscription to HPE GreenLake for Compute Ops Management is added by default when ordering an HPE ProLiant Gen11 rack, tower, or micro server.

For more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw

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 a 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 the DL325 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.**

Standard Features

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

Optional Features

Rack and Power Infrastructure

The story may end with servers, but it starts with the foundation that makes compute go – and business grow. We've reinvented our entire portfolio of rack and power products to make IT infrastructure more secure, more practical, and more efficient. In other words, we've created a stronger, smarter, and simpler infrastructure to help you get the most out of your IT equipment. As an industry leader, Hewlett Packard Enterprise is uniquely positioned to address the key concerns of power, cooling, cable management, and system access.
HPE G2 Advanced and Enterprise Racks are perfect for the server room or today's modern data center with 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 you're 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

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

https://www.hpe.com/services

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

https://www.hpe.com/services/consulting

HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

HPE Managed Services | HPE

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

https://www.hpe.com/services/operational

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

https://www.hpe.com/services/techcare

Service and Support

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

Service and Support

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms

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

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"
https://www.hpe.com/us/en/contact-hpe.html

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

Pre-Configured Models

Pre-Configured models ship with the configurations below.

- 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.

Base Models		
SKU Number	P66775-B21 P66775-291	P58690-421
Model Name	HPE ProLiant DL325 Gen11 9124 3.0GHz 16-core 1P 32GB-DR MR408i-o 8SFF 800W PS Server	HPE ProLiant DL325 Gen11 9124 3.0GHz 16-core 1P 32GB-R MR408i-o 8SFF 1000W PS EU Server
Chassis	HPE ProLiant DL325 Gen11 8SFF Configure-to-order Server	
Processor	9124 (16 core, 3.0 GHz, 200W)	
Number of Processors	One with standard heatsink	
Memory	32 GB (1x32 GB, 4800 MT/s)	
Network Controller	Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	
Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	
Included Hard Drives	None ship standard, 8 SFF supported	
Internal Storage	8 SFF Chassis (upgradeable to 10 SFF front)	
Optical Drive	Optional, None ship standard	
Expansion Slots	1 PCIe x16 Primary Riser	
Power Supply	1x HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	1x HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit
Fans	7x Standard Fans	
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)	
Rail Kit	HPE ProLiant DL3XX Gen11 Easy Install Rail 2 Kit	
Security	TPM (Trusted Platform Module)	
Energy Star	4.0 certified	
Form Factor	1U Rack	
Warranty	Server warranty includes 3-year parts, 3-year labor, 3-year onsite support with next business day response.	

Pre-Configured Models

Performance Models		
SKU Number	P66776-B21 P66776-291	P58691-421
Model Name	HPE ProLiant DL325 Gen11 9354P 3.25GHz 32-core 1P 32GB-DR MR408i-o 8SFF 800W PS Server	HPE ProLiant DL325 Gen11 9354P 3.25GHz 32-core 1P 32GB-R MR408i-o 8SFF 1000W PS EU Server
Chassis	HPE ProLiant DL325 Gen11 8SFF Configure-to-order Server	
Processor	9354P (32 core, 3.25 GHz, 280W)	
Number of Processors	One with performance heatsink	
Memory	32 GB (1x32 GB, 4800 MT/s)	
Network Controller	Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	
Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	
Included Hard Drives	None ship standard, 8 SFF supported	
Internal Storage	8 SFF Chassis (upgradeable to 10 SFF front)	
Optical Drive	Optional, None ship standard	
Expansion Slots	1 PCIe x16 Primary Riser	
Power Supply	1x HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	1x HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit
Fans	7x Performance Fans	
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)	
Rail Kit	HPE ProLiant DL3XX Gen11 Easy Install Rail 2 Kit	
Security	TPM (Trusted Platform Module)	
Energy Star	4.0 certified	
Form Factor	1U Rack	
Warranty	Server warranty includes 3-year parts, 3-year labor, 3-year onsite support with next business day response.	

Pre-Configured Models

Country Code Key

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

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 additional information on the HPE Smart Choice purchase program, please visit: **https://www.hpe.com/psnow/doc/a50009219enw**

Configuration Information

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, or Switzerland 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 fulfil 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.

Configuration Information

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

CTO Server	HPE ProLiant DL325 Gen11 8SFF Configure-to-order Server	HPE ProLiant DL325 Gen11 4LFF Configure-to-order Server	HPE ProLiant DL325 Gen11 EDSFF Configure-to-order Server	HPE ProLiant DL325 Gen11 GPU Configure-to-order Server
SKU Number	P54199-B21	P54200-B21	P54201-B21	P54202-B21
TAA SKU	P54199-B21#GTA	P54200-B21#GTA	P54201-B21#GTA	P54202-B21#GTA
HPE Trusted Supply Chain	P36394-B21 – Optional			
Processor	Not included as standard			
DIMM Slots	12-DIMM slots			
Storage Controller	Choice of HPE storage controllers			
PCIe	1 PCIe 5.0 x16 Primary Riser			3 PCIe 5.0 x16 Risers (Slot 1,4,5)
OCP3.0 Slot	2 PCIe 5.0 x8			
Drive Cage - included	Not included	4 LFF	20 EDSFF E3.S 1T	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, Performance, or Closed-Loop Liquid Cooling Heat Sink Choice of Standard, Performance, or Liquid Cooling Fan Kit			
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download), HPE GreenLake for 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	1U 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 DL325 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.

Configuration Information

CTO Server	8SFF CTO server	4LFF CTO server	EDSFF CTO server	GPU CTO server
Included Drive Cage	Not available	4 LFF backplane	20 EDSFF backplane	Not available
Universal Media Bay	1 Optional	Not Available	Not Available	Not available
ODD	1 Optional	1 Optional	Not Available	Not available
4 LFF SAS/SATA	Not Available	1 Optional	Not Available	Not available
8 SFF SAS/SATA	1 Optional	Not Available	Not Available	Not available
8 SFF NVMe	1 Optional	Not Available	Not Available	Not available
2 SFF SAS/SATA	1 Optional	Not Available	Not Available	Not available
2 SFF NVMe	1 Optional	Not Available	Not Available	Not available
20 EDSFF NVMe	Not Available	Not Available	1 Optional	Not available
4 SFF NVMe	Not Available	Not Available	Not Available	1 Optional
8 EDSFF NVMe	Not Available	Not Available	Not Available	1 Optional

Notes:

- This applies to CTO configurations, field upgrades may differ depending on field configuration.
- Drive cage kits need to be ordered separately for the 8SFF CTO server and GPU CTO server.

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 Drive
- 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 GreenLake for 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

Core Options

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 3GHz 32-core 210W Processor for HPE	P72656-B21
AMD EPYC 9375F 3.8GHz 32-core 320W Processor for HPE	P72667-B21
AMD EPYC 9355P 3.55GHz 32-core 280W Processor for HPE	P72665-B21
AMD EPYC 9255 3.25GHz 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 155W 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 155W 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 9734 2.2GHz 112-core 340W Processor for HPE	P60465-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 less than or equal to 240W require Standard Heat Sink (P58456-B21).

Core Options

- Processors more than 240W and less than or equal to 300W require Performance Heat Sink (P58457-B21)
- Processors more than or equal to 320W require Closed-Loop Liquid Cooling Heat Sink (P58463-B21).
- The supported system ambient temperature of EPYC 9254 is 25C
- The supported system ambient temperature of EPYC 9384X is 25C and cannot support with EDSFF CTO server

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.

Registered DIMMs DDR5 (RDIMMs)

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

HPE 16GB (1x16GB) Single Rank x8 DDR5-6400 CAS-46-45-45 EC8 Registered Smart Memory Kit	P64984-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-6400 CAS-46-45-45 EC8 Registered Smart Memory Kit	P64985-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-6400 CAS-46-45-45 EC8 Registered Smart Memory Kit	P64986-B21
HPE 96GB (1x96GB) Dual Rank x4 DDR5-6400 CAS-46-45-45 EC8 Registered Smart Memory Kit	P64987-B21
HPE 128GB (1x128GB) Dual Rank x4 DDR5-6400 CAS-46-45-45 EC8 Registered Smart Memory Kit	P64988-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) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P50313-B21
HPE 128GB (1x128GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P69982-B21
HPE 256GB (1x256GB) Octal Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P50314-B21

Notes:

- DDR5-6400 Memory SKUs offer a transfer rate of 6000MT/s with 5th Gen EPYC Processors.
- Mixing of x4 memory and x8 memory is not supported
- Mixing of 3DS memory and non-3DS memory is not supported.
- Supported memory configuration and recommended system ambient temperature:

Core Options

Memory	SFF/LFF/GPU CTO server			EDSFF CTO server	
	Std Fans (P58461-B21)	Perf Fans (P58462-B21)	LC Fans (P59668-B21)	Perf Fans (P58462-B21)	LC Fans (P59668-B21)
<= 64GB DIMM	30C	30C	30C	25C	25C
96GB DIMM 128GB DIMM	Not Support	30C	25C	25C	25C Max = 8 for 128G DIMM
256GB DIMM	Not Support	25C	25C Max = 4	25C	Not Support

Notes:
- Not Support = Configuration not allowed because of thermal limitation.
- Requires Performance or Liquid Cooling Fan Kit for 96GB, 128GB and 256GB DIMMs.
- Max=4 of 256GB DIMM memory can be selected if the Liquid Cooling Heat Sink/ Liquid Cooling Fan Kit is selected.
- Max=8 of 96/128GB DIMM memory can be selected if the Liquid Cooling Heat Sink/ Liquid Cooling Fan Kit is selected along with the EDSFF CTO server.

Storage

Drive cages

Notes:
- For the 8SFF CTO server, If 8SFF Backplane is not selected then Internal Controllers, Controller cables and Drives must not be allowed for selection. This config will be shipped as a driveless config.
- Maximum one (1) 2SFF backplane kits can be selected together with 8SFF backplane kit, to support up to 10SFF in total.
- The type of drives that each drive cage supports are listed in the below table.

PN	Description	SATA	SAS	NVMe U.3 Static SSD	NVMe U.3 SSD	NVMe U.2 SSD
P54999-B21	HPE DL325 Gen11 8SFF x1 TM BP Kit	X	X	X	X	Not Support
P55000-B21	HPE DL325 Gen11 8SFF x4 TM BP Kit	X	X	X	X	Not Support
P56652-B21	HPE DL325 Gen11 2SFF x4 TM BP Kit	X	X	X	X	Not Support
P64521-B21	HPE DL325 Gen11 4SFF x4 NVMe Kit	X	X	X	X	Not Support

HPE ProLiant DL325 Gen11 8SFF x1 Tri-Mode U.3 Backplane Kit P54999-B21

Notes:
- Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
- This drive cage can only be selected with 8SFF CTO Server.
- Max = 1.
- Requires Tri-Mode controllers if NVMe u.3 drives are selected with this backplane kit.
- if this Backplane kit is selected then one of the following cable options is supported:
  - with PCIe controllers: 8SFF x1 Tri-Mode Secondary Cable Kit (P57009-B21).
  - with OCP controllers: 8SFF x1 OCP2 Tri-Mode Cable Kit (P59619-B21).
  - Onboard SATA: no cable kit selection required.

HPE ProLiant DL325 Gen11 8SFF x4 Tri-Mode U.3 BC Backplane Kit P55000-B21

Notes:
- Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
- This drive cage can only be selected with 8SFF CTO Server.
- Max = 1.
- Requires Tri-Mode controllers if SAS/SATA SFF drives are selected with this backplane kit.
- if this 8SFF x4 U.3 Backplane kit is selected then one of the following cable options is supported:

Core Options

- with SR932i-p: 8SFF x4 Primary SR932i-p Tri-Mode Cable Kit (P57004-B21) or 8SFF x4 Secondary SR932i-p Tri-Mode Cable Kit (P57005-B21).
- with PCIe controllers: 8SFF x2 Tri-Mode Secondary Cable Kit (P57006-B21).
- with OCP controllers: 8SFF x2 Tri-Mode OCP2 Cable Kit (P57008-B21).
- NVMe Direct Attach: no cable kit selection required.

– Requires Performance Fan Kit (P58462-B21) or Liquid Cooling Fan Kits (P59668-B21).

HPE ProLiant DL325 Gen11 2SFF x4 Tri-Mode U.3 BC Backplane Kit P56652-B21

Notes:

– Supports 2 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives.
– This drive cage can only be selected with 8SFF CTO Server.
– Max = 1.
– if this 2SFF U.3 Backplane kit is selected then one of the following cable options is supported:
- with PCIe controllers: 2SFF x4 Secondary Tri-Mode Cable Kit (P59621-B21).
- with OCP controllers: 2SFF x4 OCP2 Tri-Mode Cable Kit (P59620-B21).
- NVMe Direct Attach: no cable kit selection required.
- Onboard SATA: 2SFF SATA Direct Attach Cable Kit (P59617-B21).

– Requires 8SFF x1 U.3 Backplane Kit (P54999-B21) or 8SFF x4 U.3 Backplane Kit (P55000-B21) in the order.
– If this drive cage is selected then optical drives (726536-B21 & 726537-B21) cannot be selected.

HPE ProLiant DL325 Gen11 4SFF x4 NVMe Drive Cage Kit P64521-B21

Notes:

– Supports 4 SFF NVMe (U.3) Basic Carrier (BC) Drives.
– This drive cage can only be selected with GPU CTO Server.
– Max = 1.
– if this 4SFF U.3 Backplane kit is selected then one of the following cable options is supported:
- with PCIe controllers: 4SFF x4 Secondary Tri-Mode Cable Kit (P70318-B21).
- with OCP controllers: 4SFF x4 OCP2 Tri-Mode Cable Kit (P69876-B21).
- NVMe Direct Attach: no cable kit selection required.

HPE ProLiant DL325 Gen11 8EDSFF x4 Drive Cage Kit P64522-B21

Notes:

– Supports 8 EDSFF NVMe Drives direct attach. No additional cable kit selection required
– This drive cage can only be selected with GPU CTO Server.
– Max = 1.

HPE ProLiant DL325 Gen11 GPU 4SFF x2 OCP Tri-Mode Backplane Kit P70287-B21

Notes:

– Supports 4 SFF NVMe (U.3) Basic Carrier (BC) Drives.
– This drive cage can only be selected with GPU CTO Server.
– Max = 1.
– This drive cage can only support connection to OCP controllers in x2 bandwidth

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.

Core Options

– 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.

Core Options

Storage Controller Cables

HPE ProLiant DL325 Gen11 8SFF x4 Primary SR932i-p Tri-Mode Cable Kit P57004-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to SR932i-p controllers at the primary riser slot with up to x4 speed.

HPE ProLiant DL325 Gen11 8SFF x4 Secondary SR932i-p Tri-Mode Cable Kit P57005-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to SR932i-p controllers at the secondary riser slot with up to x4 speed.

HPE ProLiant DL325 Gen11 8SFF x2 Secondary Tri-Mode Cable Kit P57006-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at primary riser slot with x2 speed.

HPE ProLiant DL325 Gen11 8SFF x2 OCP2 Tri-Mode Cable Kit P57008-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with x2 speed.

HPE ProLiant DL325 Gen11 8SFF x1 Secondary Tri-Mode Cable Kit P57009-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at secondary riser slot with x1 speed.

HPE ProLiant DL325 Gen11 8SFF x1 OCP2 Tri-Mode Cable Kit P59619-B21
Notes: Supports 8 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with x1 speed.

HPE ProLiant DL325 Gen11 2SFF SATA Direct Attach Cable Kit P59617-B21
Notes: Supports 2 SFF SATA direct attach.

HPE ProLiant DL325 Gen11 2SFF x4 OCP2 Tri-Mode Cable Kit P59620-B21
Notes: Supports 2 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with up to x4 speed.

HPE ProLiant DL325 Gen11 2SFF x4 Secondary Tri-Mode Cable Kit P59621-B21
Notes: Supports 2 SFF U.3 SAS/SATA/NVMe connecting to storage controllers at secondary riser slot with up to x4 speed.

HPE ProLiant DL325 Gen11 20EDSFF x2 NVMe Direct Attach Cable Kit P57010-B21
Notes: Supports 20 EDSFF E3.S 1T NVMe direct attach with x2 speed.

HPE ProLiant DL3X5 Gen11 16EDSFF x2 PCIe Tri-Mode Cable Kit P69878-B21
Notes: Supports 16 EDSFF NVMe connecting to storage controllers at Primary riser with up to x2 speed.

HPE ProLiant DL3X5 Gen11 GPU 4SFF x4 PCIe Tri-Mode Cable Kit P70318-B21
Notes: Supports 4 SFF SAS/SATA/NVMe connecting to storage controllers at secondary riser slot with up to x4 speed in GPU CTO server.

HPE ProLiant DL365 Gen11 GPU 4SFF x4 OCP Tri-Mode Cable Kit P69876-B21
Notes: Supports 4 SFF SAS/SATA/NVMe connecting to storage controllers at OCP22 slot with up to x4 speed in GPU CTO server.

HPE ProLiant DL3X5 Gen11 1P GPU 8SFF/EDSFF x4 Tri-Mode PCIe Cable Kit P70406-B21
Notes: Supports 8 EDSFF NVMe connecting to storage controllers at Primary riser with up to x4 speed in GPU CTO server.

Core Options

Supported Storage Configurations

8SFF CTO server

Drives				Backplane		Storage Controller + Cable Kit
Max Qty	SAS	SATA	U.3 NVMe	Box1	Box2	
8	-	8	-	P54999-B21	-	8SFF DA (SATA)
8	8	8	8	P54999-B21	-	OCP Ctrlr + P59619-B21
8	8	8	8	P54999-B21	-	PCIe Ctrlr + P57009-B21
8	-	-	8	P55000-B21	-	8SFF DA (NVMe x4)
8	8	8	8	P55000-B21	-	8SFF x4 SR932i-p + P57004-B21 (Pri.)
8	8	8	8	P55000-B21	-	8SFF x4 SR932i-p + P57005-B21 (Sec.)
8	8	8	8	P55000-B21	-	8SFF x2 PCIe Ctrlr + P57006-B21 (Pri.)
8	8	8	8	P55000-B21	-	8SFF x2 OCP Ctrlr + P57008-B21
10	-	8	2	P54999-B21	P56652-B21	8SFF DA (SATA); 2SFF DA (NVMe x4)
10	-	10	-	P54999-B21	P56652-B21	10SFF DA (SATA) + P59617-B21
10	2	10	2	P54999-B21	P56652-B21	8SFF DA (SATA); 2SFF OCP Ctrlr + P59620-B21
10	8	8	10	P54999-B21	P56652-B21	8SFF x1 OCP Ctrlr + P59619-B21; 2SFF DA (NVMe x4)
10	8	10	8	P54999-B21	P56652-B21	8SFF x1 OCP Ctrlr + P59619-B21; 2SFF DA (SATA) + P59617-B21
10	10	10	10	P54999-B21	P56652-B21	8SFF x1 OCP Ctrlr + P59619-B21; 2SFF x4 PCIe Ctrlr + P59621-B21 (Sec.)
10	10	10	10	P54999-B21	P56652-B21	10SFF x1 OCP Ctrlr + P59619-B21 & P59620-B21
10	10	10	10	P54999-B21	P56652-B21	10SFF x1 PCIe Ctrlr + P57009-B21 & P59621-B21 (Sec.)
10	-	-	10	P55000-B21	P56652-B21	10SFF DA (NVMe x4)
10	-	10	8	P55000-B21	P56652-B21	8SFF DA (NVMe x4); 2SFF DA (SATA) + P59617-B21
10	2	10	10	P55000-B21	P56652-B21	8SFF DA (NVMe x4); 2SFF x4 PCIe Ctrlr + P59621-B21 (Sec.)
10	2	10	10	P55000-B21	P56652-B21	8SFF DA (NVMe x4); 2SFF x4 OCP Ctrlr + P59620-B21
10	10	10	10	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57004-B21 (Pri.); 2SFF OCP Ctrlr + P59620-B21
10	8	8	10	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57004-B21 (Pri.); 2SFF DA (NVMe x4)
10	8	10	8	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57004-B21 (Pri.); 2SFF DA (SATA) + P59617-B21
10	10	10	10	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57005-B21 (Sec.); 2SFF OCP Ctrlr + P59620-B21
10	8	8	10	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57005-B21 (Sec.); 2SFF DA (NVMe x4)
10	8	10	8	P55000-B21	P56652-B21	8SFF x4 SR932i-p + P57005-B21 (Sec.); 2SFF DA (SATA) + P59617-B21
10	10	10	10	P55000-B21	P56652-B21	10SFF x2 SR932i-p + P57006-B21 & P59621-B21 (Sec.)
10	10	10	10	P55000-B21	P56652-B21	8SFF x2 OCP Ctrlr + P57008-B21; 2SFF PCIe Ctrlr + P59621-B21 (Sec.)
10	10	10	10	P55000-B21	P56652-B21	8SFF x2 PCIe Ctrlr + P57006-B21 (Sec.); 2SFF OCP Ctrlr + P59620-B21

Notes:

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

Core Options

GPU CTO server

Drives					Backplane		Storage Controller + Cable Kit
Max Qty	SAS	SATA	U.3 NVMe	EDSFF	Box1	Box2	
4	-	-	-	-	P64521-B21	-	4SFF NVMe x4 DA
4	4	4	4		P64521-B21	-	PCIe Ctrlr + P70318-B21
4	4	4	4		P64521-B21	-	OCP Ctrlr + P69876-B21 (x4 speed)
4	4	4	4		P70287-B21	-	OCP Ctrlr (x2 speed)
8	-	-	-	8	P64522-B21	-	8EDSFF NVMe x4 DA
8	-	-	-	8	P64522-B21	-	SR932i-p + P70406-B21

EDSFF CTO server

Drives					Backplane		Storage Controller + Cable Kit
Max Qty	SAS	SATA	U.3 NVMe	EDSFF	Box1	Box2	
20	-	-	-	20	Included	-	20EDSFF NVMe x4 DA
20	-	-	-	20	Included	-	P57010-B21 (x2 DA)
16	-	-	-	16	Included	-	SR932i-p + P69878-B21

Notes:

- DA = Direct Attach; Ctrlr = controller; Included = item included in the CTO server or option kit.
- 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

Core Options

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 240GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40496-B21
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 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD	P50219-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 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 CM7 SSD	P63829-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 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64842-B21
HPE 1.92TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static V2 Multi Vendor SSD	P64844-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 15.36TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static SPDM Multi Vendor SSD	P69255-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
Mixed Use - NVMe - SFF	
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-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 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P64999-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65007-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static V2 Multi Vendor SSD	P65015-B21

Core Options

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
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
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 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 EDSFF SPDM PM1743 SSD	P57803-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 3.84TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD	P69237-B21
HPE 7.68TB NVMe Gen5 Mainstream Performance Read Intensive E3S EC1 CD8P SSD	P69239-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
Mixed Use - NVMe – EDSFF E3.S 1T	
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD	P61191-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 EDSFF SPDM CM7 SSD	P61195-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
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
SED (Self-Encryption Drive) – NVMe – EDSFF E3.S 1T	
HPE 3.2TB NVMe Gen5 High Performance Mixed Use E3S EC1 Self-encrypting FIPS 140-2 CM7 SSD	P70669-B21
HPE 6.4TB NVMe Gen5 High Performance Mixed Use E3S EC1 Self-encrypting FIPS 140-2 CM7 SSD	P70672-B21
HPE 7.68TB NVMe Gen5 High Performance Read Intensive E3S EC1 Self-encrypting FIPS 140-2 CM7 SSD	P70674-B21

Core Options

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: If 15K drives are selected then 25C is the recommended system ambient temperature.

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 14TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09155-B21
HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	834031-B21
HPE 2TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833926-B21
HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD	833928-B21
HPE 6TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861746-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 - 12G SAS - SFF Drives

HPE 1TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty HDD	P53563-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 6TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD	861742-B21
HPE 14TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09165-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

Midline - 6G SATA - SFF Drives

HPE 2TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28500-B21

SED (Self-Encryption Drive)

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Self-encrypting FIPS HDD	P28618-B21
HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Self-encrypting FIPS HDD	P28622-B21

Optical Drive

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 DL325 Gen11 8SFF Display Port/USB/Optical Drive Blank Kit	P56654-B21
HPE ProLiant DL325 Gen11 4LFF Display Port/USB/Optical Drive Blank Kit	P56655-B21

Notes:

- If the 2SFF drive cage (P56652-B21) is selected then optical drives cannot be selected and vice versa.
- If the optical drive is selected along with the 8SFF CTO server (P54199-B21), then the 8SFF ODD blank kit (P56654-B21) must be selected.
- If the optical drive is selected along with the 4LFF CTO server (P54200-B21), then the 4LFF ODD blank kit (P56655-B21) must be selected.
- Both 8SFF ODD blank kit (P56654-B21) and 4LFF ODD blank kit (P56655-B21) support one (1) Display Port and one (1) USB 2.0 port.

Core Options

Boot Controllers

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device P48183-B21

Notes:

- RAID 1 is preconfigured on this option and additional RAID cannot be applied on this Boot Device
- Requires Performance Fan Kits (P58462-B21) or Liquid Cooling Fan Kits (P59668-B21)
- If this NS204i-u boot device is selected along with the SFF/LFF CTO servers and Liquid Cooling Fan Kits, then the 2SFF drive cage (P56652-B21) cannot be selected, and recommended system ambient temperature is 25C.
- Not allowed If this NS204i-u boot device is selected along with the EDSFF CTO servers and Liquid Cooling Fan Kit.
- If this NS204i-u boot device is selected then the Secondary Low Profile riser (P55029-B21) and NS204i-u Cable Kit (P57013-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 the SFF/LFF CTO servers and Liquid Cooling Fan Kit (P59668-B21), then the 2SFF drive cage (P56652-B21) cannot be selected and recommended system ambient temperature is 25C.
- Not allowed If this M.2 enablement kit is selected along with the EDSFF CTO servers and Liquid Cooling Fan Kit.

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

HPE 480GB SATA 6G Read Intensive M.2 Multi Vendor SSD P47818-B21

HPE 480GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD P40513-B21

HPE 960GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD P40514-B21

HPE 1.92TB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD P40515-B21

HPE 480GB NVMe Gen4 Mainstream Performance Read Intensive M.2 PM9A3 SSD P69543-B21

Risers

Notes: The Primary riser shipping default in ALL CTO server is PCIe Gen5 x16 FH HL.

HPE ProLiant DL3X5 Gen11 1U x16 Low Profile Secondary Riser Kit P55029-B21

HPE ProLiant DL3X5 Gen11 1U x16 Riser Kit P56915-B21

Notes:

- Both riser kits are in the secondary slot.
- Requires Low Profile Secondary riser kit if NS204i-u (P48183-B21) is selected.

HPE ProLiant DL325 Gen11 FHFL Add-on Cards Support Kit P64520-B21

Notes: this kit supports single-width FHFL add-on PCIe cards at the primary riser position

HPE Networking

Notes: 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://h20195.www2.hpe.com/v2/getpdf.aspx/A00002507ENW.pdf

PCIe Adapters

1 Gigabit Ethernet adapter

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

Core Options

10/25 Gigabit Ethernet adapters

Notes: Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature

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
HPE Ethernet 10/25Gb 2-port Secure Network Adapter	S2A69A

100/200 Gigabit Ethernet adapters

Notes: Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature

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
Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	P10180-B21
HPE NV60100M 100Gb 2-port Storage Offload Adapter	R8M41A
HPE Slingshot SA210S Ethernet 200Gb 1-port PCIe NIC	R4K46A

OCP 3.0 Adapter

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

Notes: Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature

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

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21

Notes:

- Require Performance Fan Kits (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature
- Requires OCP1 upgrade cable kit (P56658-B21) to support PCIe Gen5 x16 bandwidth on OCP21 slot

Core Options

Recommended System Ambient Temperature

P/N	SFF/LFF CTO servers				EDSFF CTO server			
	Perf Fans (P58462-B21)		LC Fans (P59668-B21)		Perf Fans (P58462-B21)		LC Fans (P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P08443-B21	30C	30C	30C	30C	30C	25C	25C	Not support
P26264-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
P42044-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
S2A69A	30C	25C	30C	25C	30C	Not support	25C	Not support
P08458-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
P21112-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
P10180-B21	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P25960-B21	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
R8M41A	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P/N	**OCP21**	**OCP22**	**OCP21**	**OCP22**	**OCP21**	**OCP22**	**OCP21**	**OCP22**
P10106-B21	30C	25C	30C	25C	30C	25C	25C	Not support
P42041-B21	30C	25C	30C	25C	30C	Not support	Not support	Not support
P26269-B21	30C	Not support	30C	Not support	30C	Not support	Not support	Not support
P22767-B21	30C	Not support	30C	Not support	30C	Not support	Not support	Not support

P/N	GPU CTO server*			
	Perf Fans (P58462-B21)		LC Fans (P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P08443-B21	30C	25C	30C	25C
P26264-B21	30C	Not support	25C	Not support
P42044-B21	30C	Not support	25C	Not support
S2A69A	30C	Not support	25C	Not support
P08458-B21	30C	Not support	25C	Not support
P21112-B21	30C	Not support	25C	Not support
P10180-B21	30C	Not support	Not support	Not support
P25960-B21	30C	Not support	Not support	Not support
R8M41A	30C	Not support	Not support	Not support
P/N	**OCP21**	**OCP22**	**OCP21**	**OCP22**
P10106-B21	30C	25C	30C	25C
P42041-B21	30C	25C	30C	25C
P26269-B21	30C	Not support	25C	Not support
P22767-B21	30C	Not support	25C	Not support

Notes:

- Not support = configuration not allowed because of thermal limitation.
- The thermal condition of GPU CTO server is based on 2pcs 72W GPUs installed at the front cage.

Core Options

HPE InfiniBand

Notes:

- Requires Performance Fan Kit (P58462-B21) or Liquid Cooling fan kits (P59668-B21) and subject to the recommended system ambient temperature
- Requires OCP upgrade cable kit (P56658-B21) for 200Gb OCP adapters (P31323-B21 or P31348-B21)
- For more information, please visit: **HPE InfiniBand Options for HPE ProLiant and Apollo Servers**

HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter	P23665-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter	P23666-B21
HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-B21
HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter	P45641-B21
HPE InfiniBand NDR200/Ethernet 200GbE 2-port QSFP112 PCIe5 x16 MCX755106AC-HEAT Adapter	P65333-B21
HPE InfiniBand NDR200/Ethernet 200Gb 1-port OSFP PCIe5 x16 MCX75310AAS-HEAT Adapter	P45642-B22

Recommended System Ambient Temperature

P/N	SFF/LFF CTO servers				EDSFF CTO server			
	Perf Fans (P58462-B21)		LC Fans (P59668-B21)		Perf Fans (P58462-B21)		LC Fans (P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P23665-B21	30C	30C	30C	30C	30C	25C	25C	Not support
P23664-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
P23666-B21	30C	25C	30C	25C	30C	Not support	25C	Not support
P31324-B21	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P45641-B21/23	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P45642-B22	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P65333-B21	30C	Not support	25C	Not support	30C	Not support	Not support	Not support
P/N	**OCP21**	**OCP22**	**OCP21**	**OCP22**	**OCP21**	**OCP22**	**OCP21**	**OCP22**
P31323-B21	30C	Not support	25C	Not support	25C	Not support	Not support	Not support
P31348-B21	30C	Not support	Not support	Not support	Not support	Not support	Not support	Not support

P/N	GPU CTO server*			
	Perf Fans(P58462-B21)		LC Fans(P59668-B21)	
	Pri. Riser	Sec. Riser	Pri. Riser	Sec. Riser
P23665-B21	30C	25C	30C	25C
P23664-B21	30C	Not support	25C	Not support
P23666-B21	30C	Not support	25C	Not support
P31324-B21	30C	Not support	Not support	Not support
P45641-B21/23	30C	Not support	Not support	Not support
P45642-B22	30C	Not support	Not support	Not support
P65333-B21	30C	Not support	Not support	Not support

Core Options

P/N	OCP21	OCP22	OCP21	OCP22
P31323-B21	25C	Not support	Not support	Not support
P31348-B21	25C	Not support	Not support	Not support

Notes:

- Not support = configuration not allowed because of thermal limitation.
- The thermal condition of GPU CTO server is based on 2pcs 72W GPUs installed at the front cage.

Accelerators

NVIDIA A2 16GB PCIe Non-CEC Accelerator for HPE R9H23C

Notes:

- This is a PCIe Gen4 x 8 single-width HHHL GPU card.
- Max = 2 at the rear.
- This GPU can only be selected with 8SFF/4LFF/EDSFF CTO Server.
- If this GPU is installed in PCIe Slot2 with Performance Fan kits (P58462-B21), the recommended system ambient temperature is 25C.
- If this GPU is installed on either PCIe Slot1 or Slot2 with Liquid Cooling Fan kits (P59668-B21), the recommended system ambient temperature is 25C.

NVIDIA L4 24GB PCIe Accelerator for HPE S0K89C

Notes:

- This is a PCIe Gen4 x 16 single-width HHHL GPU card.
- Max = 4, 2 at the front and 2 at the rear.
- This GPU can only be selected with GPU CTO Server.
- If this GPU is installed in PCIe Slot2 with Performance Fan kits (P58462-B21), the recommended system ambient temperature is 25C.
- This GPU cannot be selected with Liquid Cooling Fan kits (P59668-B21) on either PCIe Slot1 or Slot2 due to thermal limitation.

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

Notes: Requires one (1) Heat Sink and Seven (7) Fan Kit in the order.

HPE ProLiant DL3X5 Gen11 1U CPU Standard Heat Sink Kit P58456-B21

Notes: Required for processors less than or equal to 240W

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

Notes: Required for processors more than or equal to 260W and less than or equal to 300W

Core Options

HPE ProLiant DL325 Gen11 Closed-loop Liquid Cooling FIO Heat Sink Kit P58463-B21

Notes:

- This Closed-loop liquid cooling Heat Sink FIO kit is designed for processors higher than or equal to 320W.
- Requires Liquid Cooling Fan Kits (P59668-B21).
- The HPE DL325 Gen11 Closed-Loop Liquid Cooling Heat Sink FIO kit is subject to a Maximum Usage Limitation of not exceeding five (5) years of operation and is required to be replaced when reaching limitation. Parts and components that Hewlett Packard Enterprise determines have reached or exceeded their Maximum Usage limitations will not be provided, repaired, or replaced under warranty or service contract. Contact your local sales representative for additional information.
- For more information see our **HPE ProLiant Gen11 Closed-Loop Liquid Cooling Heat Sink FAQs**

HPE ProLiant DL3XX Gen11 1U Standard Fan Kit P58461-B21
HPE ProLiant DL3XX Gen11 1U Performance Fan Kit P58462-B21
HPE ProLiant DL325 Gen11 Liquid Cooling Fan Kit P59668-B21

CTO	Drive Cage	CPU	Heat Sink	Fan	Sys Temp	96/128G DIMM	256G DIMM	NS204i-u/ M.2 Kit
SFF	8SFF x1	<=240W	Standard	Standard*	30C	Not Support	Not Support	Not Support
	10SFF x1	<=240W	Standard	Performance	30C	30C	25C	30C
	8SFF x4	<=300W	Performance	Performance	30C	30C	25C	25C
	10SFF x4	<=300W	Performance	Performance	30C	30C	25C	Not Support
	8SFF x4	>300W	Liquid Cool	Liquid Cool	30C	25C	25C Max=4	25C
	10SFF x4	>300W	Liquid Cool	Liquid Cool	30C	25C	25C Max=4	Not Support
LFF	4LFF x1	<=240W	Standard	Standard*	28C	Not Support	Not Support	30C
	4LFF x1	<=240W	Standard	Performance	30C	30C	25C	30C
	4LFF x1	<=300W	Performance	Performance	30C	30C	25C	25C
	4LFF x1	>300W	Liquid Cool	Liquid Cool	30C	25C	25C Max =4	25C
EDSFF	20EDSFF	<=300W	Performance	Performance	25C	25C	25C	25C
	20EDSFF	>300W	Liquid Cool	Liquid Cool	25C	25C Max =8	Not Support	Not Support
GPU	4SFF or 8EDSFF	<=240W	Standard	Performance	30C	30C	25C	30C
		<=300W	Performance	Performance	30C	30C	25C	30C
		>300W	Liquid Cool	Liquid Cool	25C	25C	25C Max =4	Not Support

Notes:

- Require Performance Fan with <=240W CPU if any of the below options are selected with 8SFF/4LFF CTO server
  - 8SFF x4 U.3 backplane kit (P55000-B21)
  - 2SFF x4 U.3 backplane kit (P56652-B21)
  - 96GB, 128GB, or 256GB DIMM
  - NS204i-u (P48183-B21) or M.2 enablement kit (P57014-B21)
  - Networking options: 10/25G, 100/200G, and InfiniBand options.
  - Graphic options
- Liquid cooling fan (P59668-B21) can only be selected with liquid cooling heat sink (P58463-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.

Core Options

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 DL325 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 DL325Gen11 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 DL3XX Gen11 Intrusion Cable Kit P48922-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 ProLiant Gen11 1U Common Bezel Kit	P50450-B21
HPE Bezel Lock Kit	875519-B21

Notes: The Bezel lock kit (875519-B21) must be selected with the bezel kit (P50450-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

Core Options

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 Enhanced 3-year Upfront ProLiant SaaS	R7A11AAE
HPE Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS	R7A12AAE
HPE Compute Cloud Management Server FIO Enablement	S1A05A

HPE OneView

HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView including 3yr 24x7 Support Track 1-server LTU	E5Y36A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support Bundle Track 1-server LTU	E5Y44A

For more information, visit the HPE Compute Ops Management QuickSpecs:
https://www.hpe.com/psnow/doc/a50004263enw

Supported Servers – CTO only. No OEM. – Complete list can be found here: Latest Supported Server List:
https://www.hpe.com/info/com-supported-servers

Additional Options

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

Embedded Management

HPE iLO Advanced

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

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 ProLiant DL3XX Gen11 Easy Install Rail 3 Kit	P52341-B21
Notes: This Rail kit can be selected only with the 4LFF/EDSFF CTO server.	
HPE DL3XX Gen11 Easy Install Rail 2 Kit	P52351-B21
Notes: This Rail kit can be selected only with the 8SFF CTO server.	
HPE Easy Install Rail 7 Kit	P52339-B21
Notes: This Rail kit can be selected only with the GPU CTO server.	
HPE ProLiant DL300 Gen10 Plus 1U Cable Management Arm for Rail Kit	P26489-B21
Notes: CMA can be selected only with the Rail kit.	

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 Soutions Compatibilty Matrix link above.

Additional Options

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

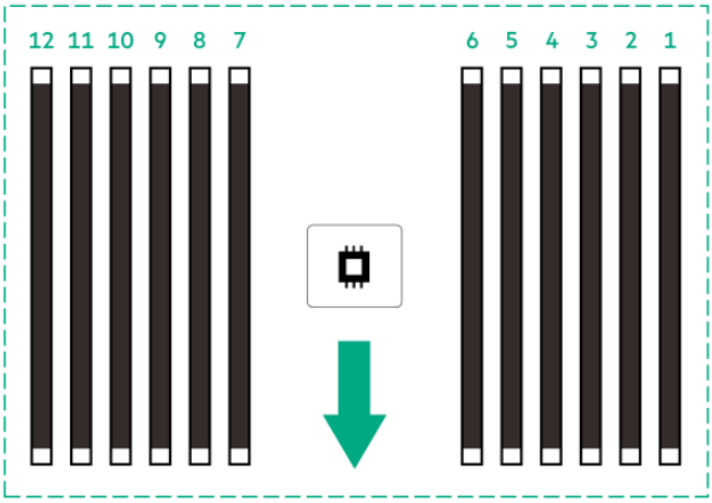
- Please see the **HPE KVM Switches web page** for information on these products and their specifications

HPE Support Service

Tech Care

HPE 3 Year Tech Care Essential DL325 Gen11 Service	H78S6E
HPE 3 Year Tech Care Essential wDMR DL325 Gen11 Service	H78S7E
HPE 5 Year Tech Care Essential DL325 Gen11 Service	H78V0E
HPE 5 Year Tech Care Essential wDMR DL325 Gen11 Service	H78V1E

Memory

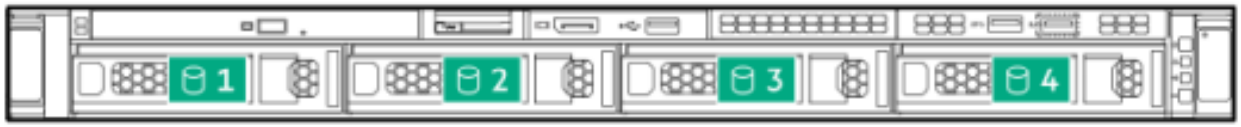


The arrow points to the front of the server

General Memory Population Rules and Guidelines:

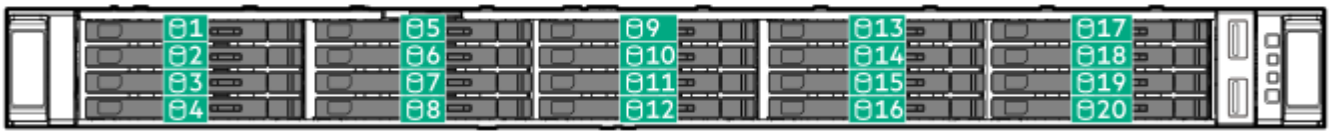
- Install DIMMs only after the corresponding processor is installed.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, and 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**

Storage

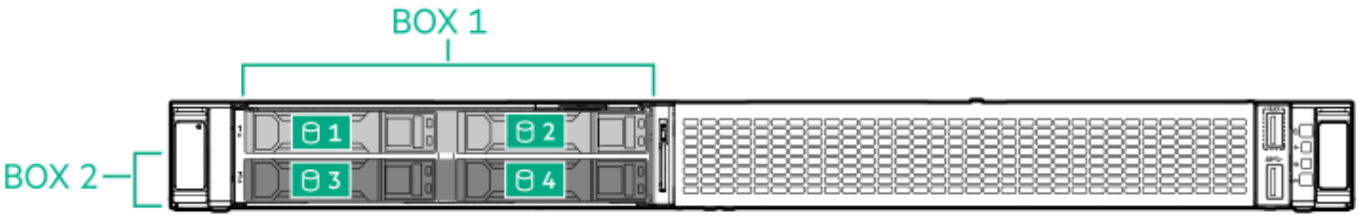


4LFF drives

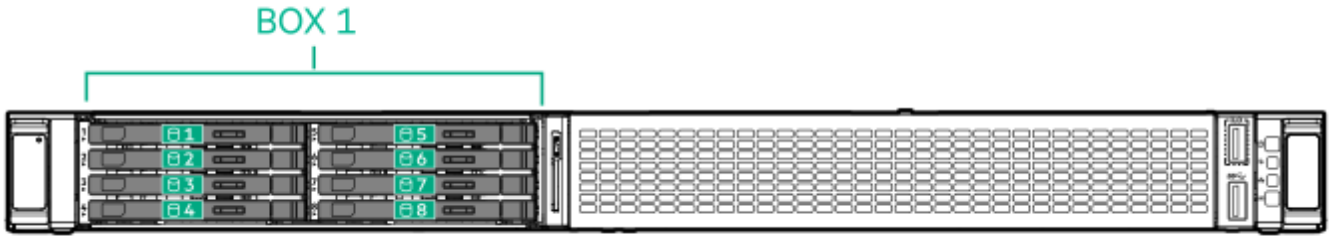
8SFF + Optional 2SFF (SAS/SATA/ NVMe)



20 EDSFF E3.S 1T Drives



4 SFF Drives in GPU CTO server



8 EDSFF Drives in GPU CTO server

Technical Specifications

System Unit

Dimensions (Height x Width x Depth)

- 8SFF chassis:
  - 4.29 X 43.46 X 64.94 cm
  - 1.69 X 17.11 X 25.57 In
- 4LFF & EDSFF chassis:
  - 4.29 X 43.46 X 70.89 cm
  - 1.69 X 17.11 X 27.91 In
- GPU Chassis
  - 4.29 X 43.46 X 81.84 cm
  - 1.69 X 17.11 X 32.22 In
- Package
  - 24.2 X 60 X 91.6 cm
  - 9.53 X 23.6 X 36.06 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 7 standard fans.
    - 12.56 kg
    - 27.69 lb
  - Maximum: 8 SFF chassis with 8 drives, 1 processor, 2 power supply, 1 standard heatsink, 12 DIMM, 1 Smart Array controller, and 7 standard fans.
    - 15.54 kg
    - 34.27 lb
  - Package
    - 4.21 kg
    - 9.281 lb
- 4LFF chassis:
  - Minimum: 4 LFF chassis with 0 drives, 1 processor, 1 power supply, 1 performance heatsink, 1 DIMM, 1 Smart Array controller, and 7 performance fans.
    - 14.31 kg
    - 31.54 lb
  - Maximum: 4 LFF chassis with 4 drives, 1 processor, 1 power supply, 1 performance heatsink, 1 DIMM, 1 Smart Array controller, and 7 performance fans.
    - 17.07 kg
    - 37.63 lb
  - Package
    - 4.145 kg
    - 9.138 lb
- EDSFF chassis:
  - Minimum: EDSFF chassis with 1 drive, 1 processor, 1 power supply, 1 standard heatsink, 2 DIMM, and 7 performance fans.
    - 13.71 kg
    - 30.23 lb
  - Maximum: EDSFF chassis with 20 drives, 1 processor, 1 power supply, 1 performance heatsink, 12 DIMM, and 7 performance fans.
    - 17.76 kg
    - 39.15 lb

Technical Specifications

- GPU Chassis
  - Minimum: GPU chassis with 2 EDSFF drives, 1 double-width accelerators, 1 processor, 1 power supply, 1 standard heatsink, 2 DIMM, and 7 performance fans.
    - 16.59 kg
    - 36.58 lb
  - Maximum GPU chassis with 8 EDSFF drives, 2 double-width accelerators, 1 processor, 1 power supply, 1 performance heatsink, 12 DIMM, and 7 performance fans.
    - 21.05 kg
    - 46.41. 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

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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

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Technical Specifications

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). The maximum rate of change is 20°C/hr (36°F/hr).

Relative Humidity(non-condensing)

- **Operating**
  8% to 90% - Relative humidity (Rh), 28°C maximum wet bulb temperature, non-condensing.
- **Non-operating**
  5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Altitude

- **Operating**
  3050 m (10,000 ft). This value may be limited by the type and number of options installed. The maximum allowable altitude change rate is 457 m/min (1500 ft/min).
- **Non-operating**
  9144 m (30,000 ft). The 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:
https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072

Technical Specifications

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 under ISO 7779 (ECMA 74) and declared under 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	5.1 B Perf 4.7 B Value
LpAm	37 dBA Perf 35 dBA Value
Kv	0.4 B Perf 0.4 B Value
Operating	
LWA,m	5.9 B Perf 5.7 B Value
LpAm	47 dBA Perf 42 dBA Value
Kv	0.4 B Perf 0.4 B Value

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 EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise 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
06-Jan-2025	Version 26	Changed	Core Optiosn section was updated.
02-Dec-2024	Version 25	Changed	Core Options and Additional Options sections were updated. (OBS SKUs were removed).
04-Nov-2024	Version 24	Changed	Standard Features and Core Options sections were updated.
10-Oct-2024	Version 23	Changed	Overview, Standard Features and Core Options sections were updated.
26-Sep-2024	Version 22	Changed	Standard Features (Operating Systems and Virtualization Software Support for HPE Servers)
05-Aug-2024	Version 21	Changed	Configuration Information (TPM China) and Core Options sections were updated.
15-Jul-2024	Version 20	Changed	Pre-Configured Models section was updated.
01-Jul-2024	Version 19	Changed	Core Options section was updated.
03-Jun-2024	Version 18	Changed	Pre-Configured Models and Core Options sections were updated.
20-May-2024	Version 17	Changed	Configuration Information and Core Options sections were updated.
15-Apr-2024	Version 16	Changed	Pre-Configured Models section was updated.
01-Apr-2024	Version 15	Changed	Core Options section was updated.
04-Mar-2024	Version 14	Changed	Overview, Standard Features, Pre-Configured Models, Configuration Information, Core Options and Additional Options sections were updated.
04-Dec-2023	Version 13	Changed	Service and Support and Core Options sections were updated.
02-Oct-2023	Version 12	Changed	Overview, Standard Features, Pre-Configured Models and Core Options sections were updated.
05-Sep-2023	Version 11	Changed	Overview, Standard Features, Pre-configured Models, Configuration Information, and Core Options sections were updated.
07-Aug-2023	Version 10	Changed	Overview, Standard Features, Pre-Configured Models, Configuration Information, Core Options, Additional Options, Storage, and Technical Specifications sections were updated.
10-Jul-2023	Version 9	Changed	Overview, Standard Features, Service and Support, Pre-Configured Models, Configuration Information, Core Options and Memory sections were updated.
13-Jun-2023	Version 8	Changed	Overview, Standard Features, Service and Support, Pre-Configured Models and Core Options sections were updated.
01-May-2023	Version 7	Changed	Standard Features and Core Options sections were updated
03-Apr-2023	Version 6	Changed	Overview, Standard Features, Configuration Information, Core Options, Additional Options, Memory, Storage 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	Overview and Standard Features 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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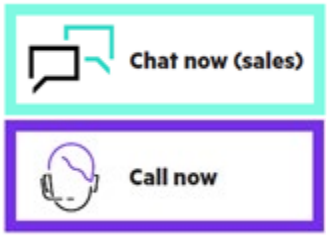

Get updates

Hewlett Packard Enterprise

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

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