## Overview

HPE ProLiant DL345 Gen11

Are you looking for a single-socket scalable server solution to power your virtualized data-intense, large-capacity storage workloads? The HPE ProLiant DL345 Gen11 server is a scalable 2U 1P solution that delivers exceptional compute performance and large capacity storage options at 1P economics. Powered by 4th Generation AMD EPYC™ Processors with up to 96 cores, increased memory bandwidth (up to 3 TB*), high-speed PCIe Gen5 I/O and EDSFF* storage, up to 20LFF/ 34SFF, and up to 4 GPUs* at the front, this server is a superb single-socket 2U solution for your data-intensive workloads.   Enhanced security features with the HPE silicon root of trust are built into the firmware, creating a digital fingerprint for the AMD Secure Processor to validate safe operation prior to boot. The HPE DL345 Gen11 server provides impressive storage performance and options for data-intensive workloads like software-defined storage, video transcoding, and virtualized apps.
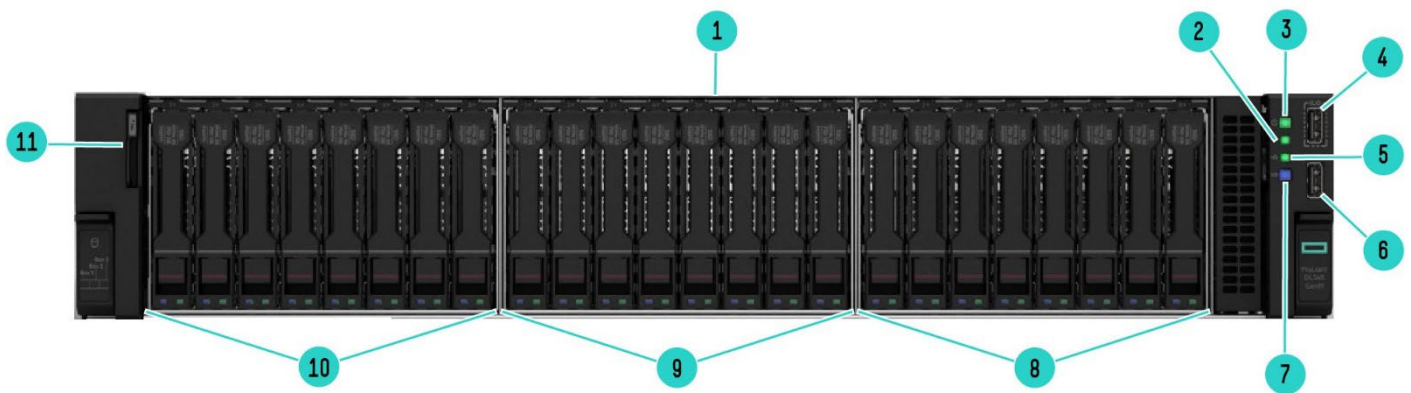

Front View - 24 SFF chassis shown

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

Notes:
- Maximum Memory Capacity, EDSFF and GPU Mode-X support available 1H 2023, subject to change
- [1]Optional: Universal Media Bay

Overview
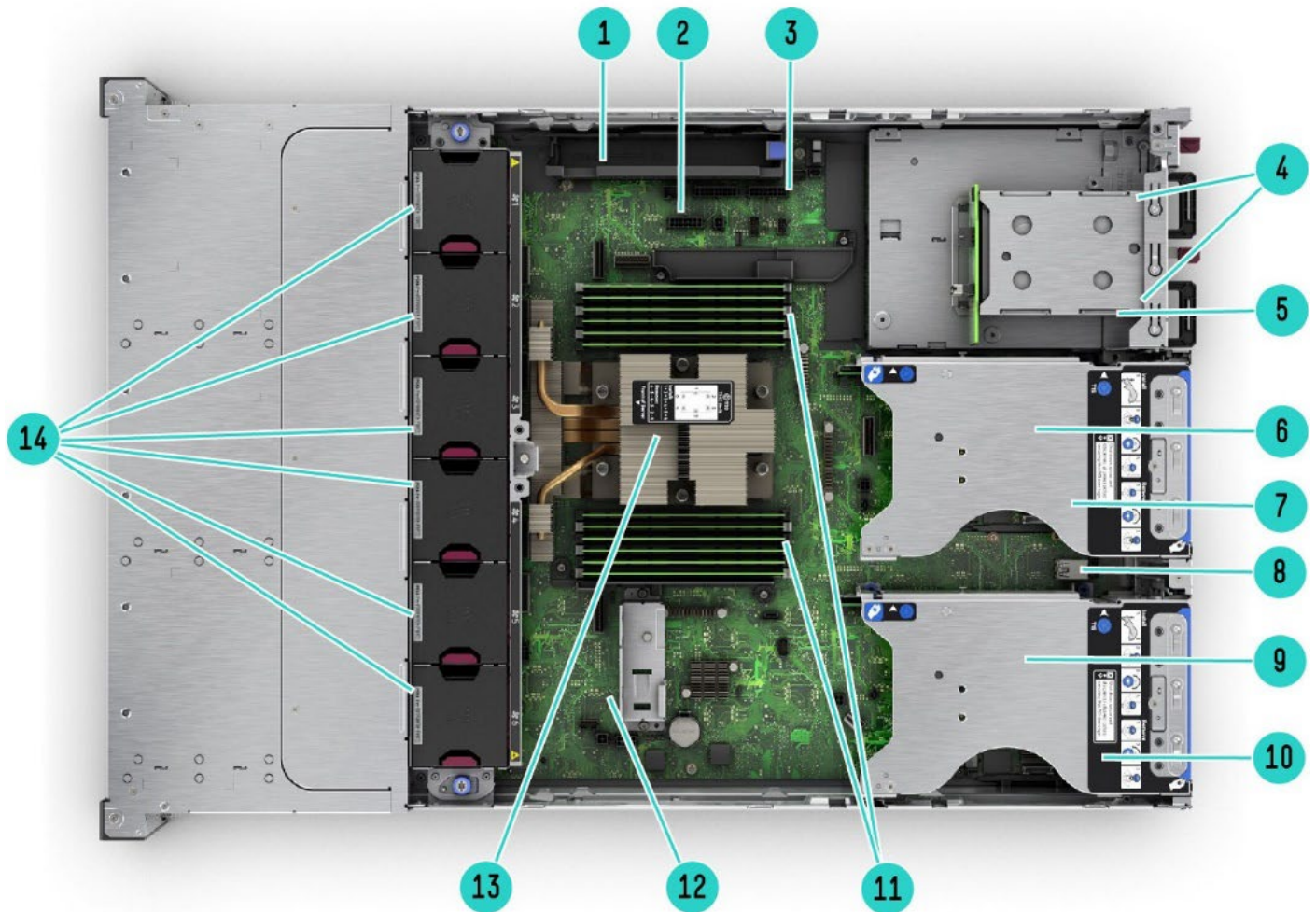
Internal View – 2 SFF rear cage shown

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 (Under)
5. Rear 2 SFF Cage Bay (Optional)
6. Secondary PCIe 5.0 risers, slot 4,5,6
7. OCP 3.0 Slot 22 (Under)

8. Internal Dual USB 3.2 Gen1 port
9. Primary PCIe 5.0 risers, slot 1,2,3
10. OCP 3.0 Slot 21 (Under)
11. DDR5 DIMM slots[1]
12. FHFL PCIe card holder
13. Up to 1 Processor shown with standard heat sink[2]
14. Hot plug fans[3, 4]

Notes:
- [1]Fully populated 12 DIMMs shown
- [2]Optional: Performance Heat Sink
- [3]6 dual rotor standard shown
- [4]Optional: Performance Fans

Overview
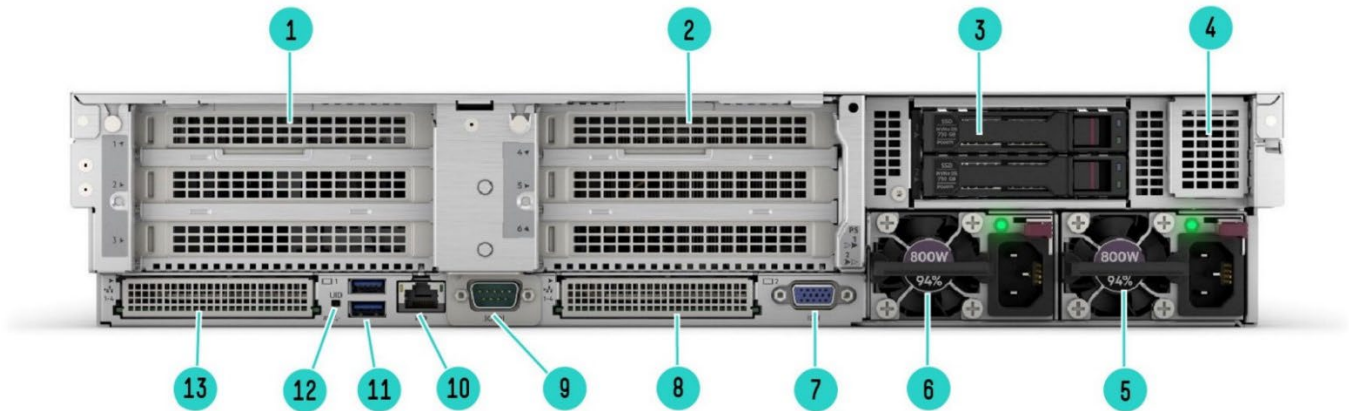
Rear View - 2 SFF rear cage shown

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

Notes:
- [1]PCIe Slots 1,2,3 top to bottom.
- [2]PCIe Slots 4,5,6 top to bottom.

What's New:

- Supports the 4th Generation AMD EPYC™ Processors that supports up to 96 cores, 400W, and 384MB of L3 Cache.
- 12 DIMM channels per processor for up to 3TB* total DDR5 memory 4800MT/s.
- Advanced data transfer rate and higher network speed from the PCIe Gen5 serial expansion bus
- Includes HPE Integrated Lights-Out 6 (iLO 6) server management software
- Supports hot-pluggable, high-availability RAID M.2 boot options.
- Supports up to 6 PCIe x16 Gen5 expansion slots.
- Supports 4LFF/8SFF Midtray and 2SFF/4LFF Rear Drvie bay.
- Supports up to 36 EDSFF Drive bay*.
- Supports up to 4x Single Width or 2x Double Width GPU cards at the front chassis*.

Notes: *Maxmium Memory Capacity, EDSFF and GPU Mode-X support available 1H 2023, subject to change

Platform Information

Form Factor
- 2U rack

Chassis Types
- 8 SFF with options for aditional 16 SFF front drive bay, 8 SFF midtray and 2 SFF rear drives to total 34 SFF drives.
- 8 LFF with options for aditional 4 LFF front drive bay, 4LFF midtray and 4LFF rear drives to total 20 LFF drives.
- 36 EDSFF* drive bay.
- 4 Single Width or 2 Double Width GPUs* with 12 EDSFF* drive bay.

Notes: *EDSFF and GPU Mode-X support available 1H 2023, subject to change

Overview

System Fans
- Choice of Standard Fan Kit and Performance Fan kit

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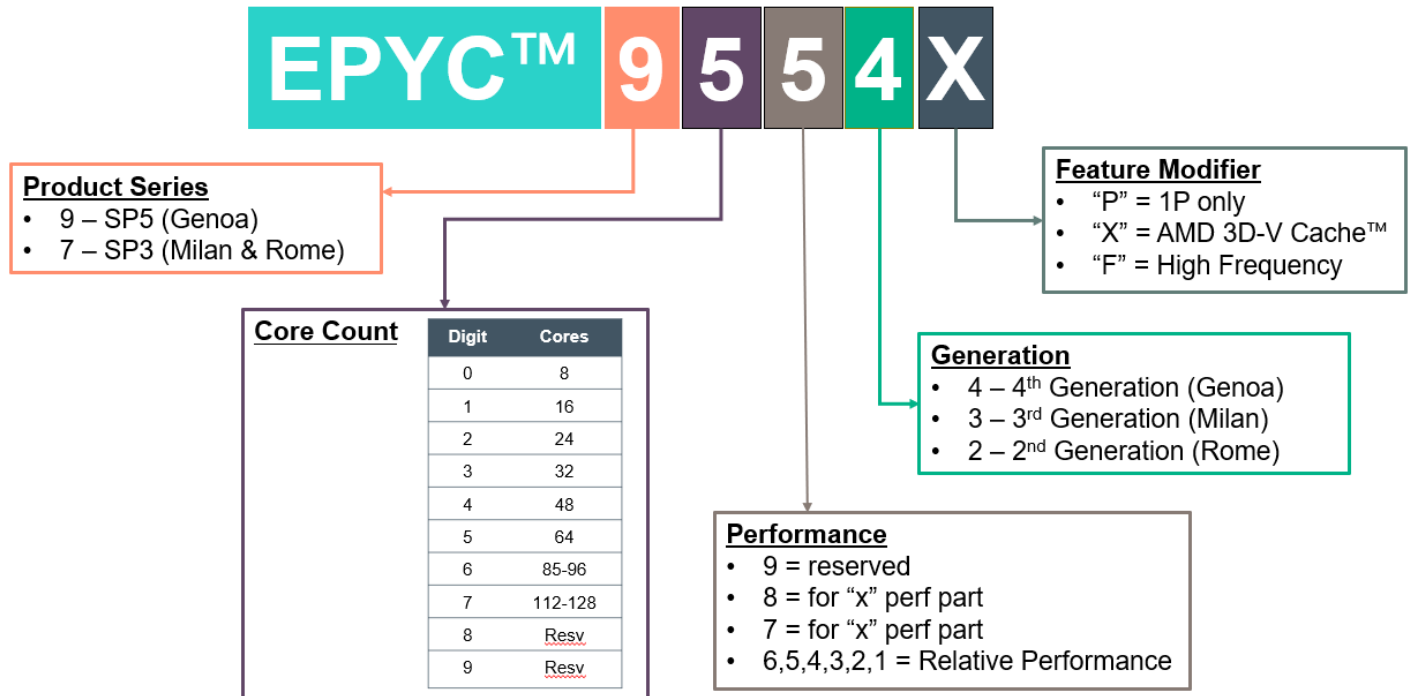
Standard Features

Processors – One of the following depending on model.
Notes: For more information regarding AMD EPYC processors, please see the following:
https://www.amd.com/en/products/epyc.

EPYC™ 9 5 5 4 X

Product Series
- 9 – SP5 (Genoa)
- 7 – SP3 (Milan & Rome)

Feature Modifier
- "P" = 1P only
- "X" = AMD 3D-V Cache™
- "F" = High Frequency

Core Count

Digit	Cores
0	8
1	16
2	24
3	32
4	48
5	64
6	85-96
7	112-128
8	Resv
9	Resv

Generation
- 4 – 4th Generation (Genoa)
- 3 – 3rd Generation (Milan)
- 2 – 2nd Generation (Rome)

Performance
- 9 = reserved
- 8 = for "x" perf part
- 7 = for "x" perf part
- 6,5,4,3,2,1 = Relative Performance

4th Gen AMD EPYC Processor	Cores	Base Frequency	Max Frequency	Max Memory	Wattage	Cache	Memory
EPYC 9124	16	2.7 GHz	3.7 GHz	3TB	240W	64MB	4800MT/s
EPYC 9174F	16	4.1 GHz	4.4 GHz	3TB	400W	256MB	4800MT/s
EPYC 9224	24	2.25 GHz	3.7 GHz	3TB	240W	64MB	4800MT/s
EPYC 9354P	32	2.85 GHz	3.7 GHz	3TB	300W	256MB	4800MT/s
EPYC 9374F	32	3.5 GHz	4.0 GHz	3TB	400W	256MB	4800MT/s
EPYC 9554P	64	3.1 GHz	3.75 GHz	3TB	400W	256MB	4800MT/s
EPYC 9654P	96	2.4 GHz	3.7 GHz	3TB	400W	384MB	4800MT/s

Notes:
- 6096pin LGA SP5 new socket type.
- 1MB L2/Core, Up to 32MB L3/CCD
- All 4th generation AMD EPYC processors can support up to 3TB of memory each under 1DPC, 12 channel per processor.
- 128 PCIe 5.0 Lanes
- 64 IO Lanes support CXL1.1+ with bifurcations supported down to x4
- The wattage information indicates the cTDP (Configurable TDP) of the processor.

Chipset
No chipset – System on Chip (SoC) design.

Standard Features

On System Management Chipset
- HPE iLO 6 ASIC

Notes: Read and learn more in the **iLO QuickSpecs**

Memory
One of the following depending on model

Type:	HPE DDR5 SmartMemory	Registered (RDIMM)
DIMM Slots Available	12	12 DIMM slots per processor, 12 channels per processor, 1 DIMMs per channel
Maximum capacity (RDIMM)	3.0 TB	12 x 256 GB RDIMM @ 4800 MT/s at 1 DPC

Notes:
- All processors support up to 3TB memory per server. Maxmium Memory Capacity support available 1H 2023, subject to change
- LRDIMM and Persistent Memory is not supported.
- For additional information, please see the **HPE DDR5 SmartMemory QuickSpecs**.
- For General Server Memory and Persistent Memory Population Rules and Guidelines, see details here: **http://www.hpe.com/docs/memory-population-rules**

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
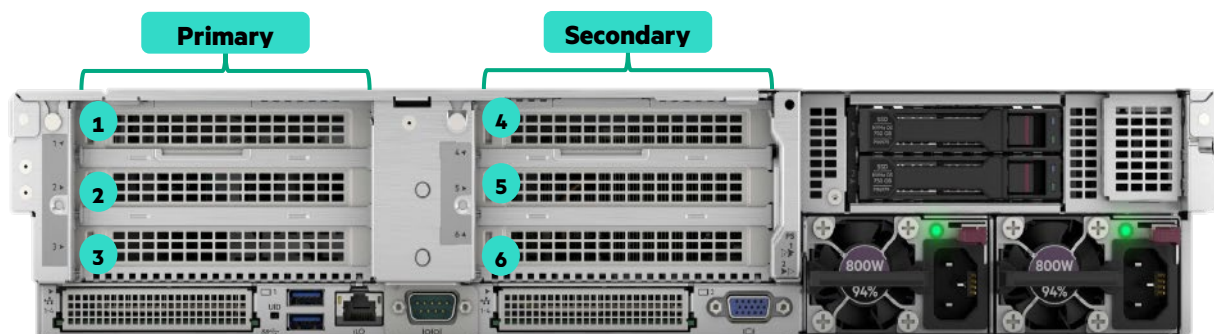
Default Two(2) Slots

Standard Features

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

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

Optional Four(4) Slots

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

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

Notes:
- This optional 4 expansion slot configuration is enabled through enablement kit (P57116-B21)
- When supporting Slot1 & Slot22 scenario, Slot1 & Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot2 & Slot3 scenario, Slot2 & Slot3 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.

Optional 6 slots

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

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

Notes:
- This optional 6 expansion slots configuration is enabled through enablement kit (P57117-B21)
- When supporting Slot1 & Slot21 scenario, Slot1 & Slot21 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot2 & Slot3 scenario, Slot2 & Slot3 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot4 & Slot22 scenario, Slot4 & Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting Slot5 & Slot6 scenario, Slot5 & Slot6 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.

Standard Features
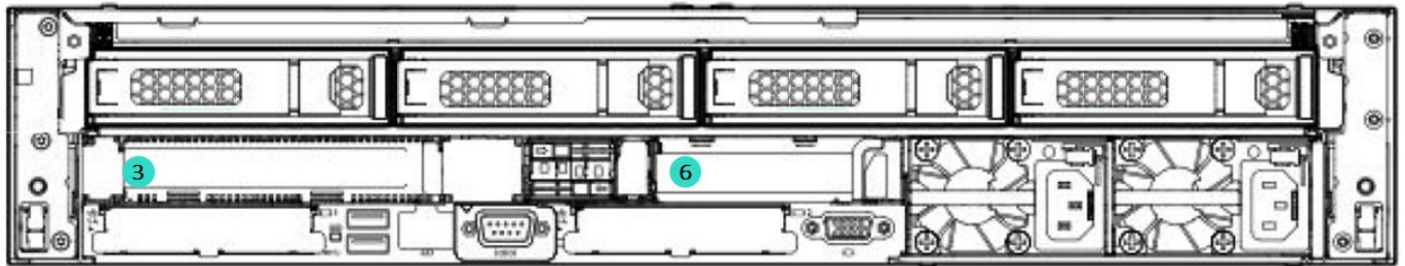
2 slots with 4 LFF rear drives

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

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

Notes:
- When 4LFF drive bay loaded at the rear, 2 Primary riser kit (P55098-B21) or 1 Primary riser kit (P55098-B21) plus 1 Low profile riser kit (P59260-B21) with NS204i-u boot device (P48183-B21) must be in the order.
- When supporting GPU Slot9 & Slot22 scenario, GPU Slot9 & Slot22 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.
- When supporting GPU Slot16 & Slot21 scenario, GPU Slot16 & Slot21 combined can support up to 112GB/s bandwidth due to AMD CPU limitation.

Storage Controllers

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

Notes:
- Does not occupied a PCIe slot
- RAID 1 supported on this NS204i-u boot optimized storage device

Smart Array Controllers
- HPE Smart Array E208e-p SR Gen10 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
- HPE SR308i-p Gen11 x8 Lanes 2GB Cache PCI Plug-in Storage Controller

Standard Features

- HPE SR308i-o Gen11 x8 Lanes 2GB Cache OCP Storage Controller
- HPE SR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM 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 Quick Spec
   HPE Compute SR Gen11 Controllers Quick Spec

Internal Storage Devices

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

Drives
- None ship standard

Maximum Internal Storage		
	Capacity	**Configuration**
Hot Plug LFF SAS HDD	400 TB	20 x 20 TB
Hot Plug LFF SATA HDD	400 TB	20 x 20 TB
Hot Plug SFF SAS SSD	261.12 TB	34 x 7.68 TB
Hot Plug SFF SATA SSD	261.12 TB	34 x 7.68 TB
Hot Plug SFF NVMe PCIe U.3 SSD	552.24 TB	34 x 15.36 TB

Interfaces

Serial	1 port - Optional
Video Port	1 Rear VGA Port - Standard
Network Ports	None. Choice of OCP or stand up card, supporting a wide arrange of NIC adapters
HPE iLO Remote Mgmt Port	1 Gb Dedicated
Front iLO Service Port	1 standard
USB 3.2 Gen1	5 standard on all models: 1 front, 2 rear, 2 internal

Graphics

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

HPE iLO 6 on system management memory
- 64 MB Flash
- 8 Gbit DDR 4 with ECC protection

Standard Features

Power Supply
- HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 94% Efficiency.
- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
  Notes: Available in 94% 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 Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, 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 ProLiant Servers
- Windows Server 2019
- Windows Server 2022
- Red Hat Enterprise Linux (RHEL) 8.6
- Red Hat Enterprise Linux (RHEL) 9.0
- SUSE Linux Enterprise Server (SLES) 15 SP4

Notes:
- Pending VMware 7.0 U3 and VMware 8.0 certification.
- For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server.
  https://www.hpe.com/us/en/servers/server-operating-systems.html

Industry Standard Compliance
- ACPI 6.1 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA/Display Port
- USB 3.2 Gen1 Compliant
- USB 2.0 Compliant
- Energy Star
- SMBIOS 3.1
- UEFI 2.9
- UEFI Class 3
- Redfish API

Standard Features

- IPMI 2.0
- Secure Digital 2.0
- Advanced Encryption Standard (AES)
- Triple Data Encrytion Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- European Union (EU) eco-design regulations for server and storage products, known as Lot 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen11 servers are compliant with Lot9 requirements. For more information regarding HPE Lot 9 conformance, please visit: **https://www.hpe.com/us/en/about/environment/msds-specs-more.html**
- ASHRAE **A3/A4**
  Notes: For additional technical thermal details regarding ambient temperatures, humidity and features support please visit: **http://www.hpe.com/servers/ashrae**.
- UEFI (Unified Extensible Firmware Interface Forum)
- 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**.

HPE Server UEFI
Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE 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 for enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.1 Gen1 Stack
- Embedded UEFI Shell

Standard Features

- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization
- Embedded TPM Support

UEFI Boot Mode only
- NVMe Boot Support
- iSCSI Software Initiator Support.
- HTTP/HTTPs Boot support as a PXE alternative.

Boot support for option cards that only support a UEFI option ROM

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**.

Active System Health Viewing
The Active System Health Viewer (AHSV) is deprecated as of March 2022. Users are now recommended to use the InfoSight for Servers Portal for AHS viewing capabilities. In InfoSight for Servers portal, users will also be able to view hardware configuration details, firmware and driver information, warranty and support status of a server, wellness alerts, and create support cases for servers under a valid warranty or support contract.
HPE InfoSight provides the same security assurances as that of AHSV. Furthermore, InfoSight can be used as an AHSV replacement even if customers do not want to share AHSV logs and telemetry data on an ongoing basis.

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/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 with 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 premesis, 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

Security
- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- FIPS 140-3 validation (iLO 6 certification in progress)
- Common Criteria certification (iLO 6 certification in progress)
- Configurable for PCI DSS compliance
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Support for Commercial National Security Algorithms (CNSA)
- Tamper-free updates – components digitally signed and verified
- Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
- Ability to rollback firmware
- Secure erase of NAND/User data
- TPM (Trusted Platform Module) 2.0 option
- 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 full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.

HPE 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, provides full-featured licenses which can be purchased for managing multiple HPE server generations. To learn more visit **http://www.hpe.com/info/oneview.**

HPE InfoSight for Servers
HPE InfoSight for Servers combines the cloud-based machine learning of InfoSight with the health and performance monitoring of Active Health System (AHS) and iLO to optimize performance and predict and prevent problems. The end result is an intelligent environment that modernizes IT operations and enhances the support experience by predicting and preventing the infrastructure issues that lead to application disruptions, wasted IT staff time and missed business opportunities.

Learn more at **https://www.hpe.com/servers/infosight**

HPE GreenLake for Compute Ops Management
HPE is intelligently transforming compute management with a completely new As a Service experience that delivers greater security, simplicity, and efficiency. Discover a completely modernized compute management experience delivered through HPE GreenLake that securely streamlines operations from edge-to-cloud, and automates key lifecycle tasks (onboard, update, manage and monitor HPE servers), bringing the agility and greater efficiencies to wherever compute devices reside via a unified single browser-based interface.

Compute Ops Management is built on a unique cloud-native architecture that abstracts, manages and controls HPE servers regardless of physical location. 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.

Each HPE ProLiant Gen11 rack, tower and micro server will include a 3-year subscription to HPE GreenLake for Compute Ops Management - Standard Tier. Upgrades to Standard Tier 5 Year term or to an Enhanced Tier, 3 or 5 Year term, subscription can be made at time of order. Upgrades to Enhanced tier or OneView can also be made at any time.

Service and Support

HPE Pointnext - Service and Support
No matter where you are in your digital transformation journey, you can count on HPE Pointnext Services to provide the expertise you need, when and where you need it.

Advisory and Professional Services
Our Digital Next Advisory approach can help you identify, prioritize, and implement the right transformation initiatives to create new edge experiences, get real-time insights from all your data, and modernize your IT to enable new opportunities.

Operational Services
Take your IT operations to the next level with expertise and tools that can help save your staff time, manage complexity, and identify new ways to drive efficiency and effectiveness in your IT.

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

HPE Pointnext Complete Care
HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:
- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

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

HPE Lifecycle Services
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:
- Installation 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 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.
- HPE Implementation Assistance Service: 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.
    - For a list of the most frequently purchased services using service credits, see the
      Universal Service Credits Menu

Service and Support

Other related services from HPE Pointnext Services:

HPE Education Services
Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Defective Media Retention
An option available with HPE Pointnext Complete Care and HPE Pointnext Tech Care 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 support 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 QuickSpecs or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

AI Powered and Digitally Enabled Support Experience
Achieve faster time to resolution with access to product-specific resources and expertise through a brand-new digital and data driven customer experience.

Sign into the new 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 a new intelligent virtual agent with seamless transition when needed to a live support agent.

Learn more: **https://support.hpe.com/hpesc/public/home/signin**

Consume IT on your terms
HPE Support 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 HPE Support Services at **https://ssc.hpe.com/portal/site/ssc/**

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.
- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations
HPE GreenLake Management Services provide 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.

Pre-configured Models

Base Models		
	Base 8 SFF	**Base 8 LFF**
SKU Number	**P58792-B21** **P58792-291** **P58792-AA1**	**P58793-B21** **P58793-291** **P58793-AA1**
Model Name	HPE ProLiant DL345 Gen11 9124 2.7GHz 16-core 1P 32GB-R MR408i-o 8SFF 800W PS Server	HPE ProLiant DL345 Gen11 9124 2.7GHz 16-core 1P 32GB-R MR408i-o 8LFF 800W PS Server
Processor	9124 (16-Core, 2.7 GHz, 240W)	9124 (16-Core, 2.7 GHz, 240W)
Number of Processors	One processor	One processor
Memory	32 GB RDIMM SR 4800 MT/s (1x 32 GB)	32 GB RDIMM SR 4800 MT/s (1x 32 GB)
Network Controller	HPE 1GbE 4-port OCP3 Adapter plus choice of OCP or standup card	HPE 1GbE 4-port OCP3 Adapter plus choice of OCP or standup card
Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller
Drive	None ship as standard	None ship as standard
Internal Storage	8 SFF Chassis	8 LFF Chassis
Optical Drive	None ship as standard	None ship as standard
PCI-Express Slots	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)
Power Supply	1x 800W HPE FlexSlot Power Supply	1x 800W HPE FlexSlot Power Supply
Fans	6-standard fans	6-standard fans
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)
Energy Star	3.0 certified	3.0 certified
Form Factor	2U Rack	2U Rack
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	3-year parts, 3-year labor, 3-year onsite support with next business day response.

HPE ProLiant DL345 Gen11

Pre-configured Models

Base Models		
	Base 8 SFF	**Base 8 LFF**
SKU Number	**P58792-421**	**P58793-421**
Model Name	HPE ProLiant DL345 Gen11 9124 2.7GHz 16-core 1P 32GB-R MR408i-o 8SFF 1000W PS EU Server	HPE ProLiant DL345 Gen11 9124 2.7GHz 16-core 1P 32GB-R MR408i-o 8LFF 1000W PS EU Server
Processor	9124 (16-Core, 2.7 GHz, 240W)	9124 (16-Core, 2.7 GHz, 240W)
Number of Processors	One processor	One processor
Memory	32 GB RDIMM SR 4800 MT/s (1x 32 GB)	32 GB RDIMM SR 4800 MT/s (1x 32 GB)
Network Controller	HPE 1GbE 4-port OCP3 Adapter plus choice of OCP or standup card	HPE 1GbE 4-port OCP3 Adapter plus choice of OCP or standup card
Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller
Hard Drive	None ship as standard	None ship as standard
Internal Storage	8 SFF Chassis (upgradeable to 16 SFF front)	8 LFF Chassis (upgradeable to 12 LFF front)
Optical Drive	None ship as standard	None ship as standard
PCI-Express Slots	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)
Power Supply	1x 1000W HPE FlexSlot Power Supply Notes: EU Lot-9 compliant.	1x 1000W HPE FlexSlot Power Supply Notes: EU Lot-9 compliant.
Fans	6-standard fans	6-standard fans
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download)
Energy Star	3.0 certified	3.0 certified
Form Factor	2U Rack	2U Rack
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	3-year parts, 3-year labor, 3-year onsite support with next business day response.

Country Code Key

xx1 = B21 Worldwide

xx1 = 291 Japan
xx1 = 421 EMEA
xx1 = AA1 China

Notes: The -B21 WW SKU is to be orderable in all countries other than Japan.

Configuration Information

European Union (EU) eco-design regulations for server and storage products, known as Lot 9, go into effect on March 1st, 2020. Among other requirements, for servers this directive establishes power thresholds for idle state, as well as efficiency and performance in active state which vary among configurations. HPE ProLiant Gen11 are compliant with Lot9 requirements.

For more information regarding HPE Lot 9 conformance, please visit:
https://www.hpe.com/us/en/about/environment/msds-specs-more.html

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

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

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

CTO Server	HPE ProLiant DL345 Gen11 8LFF Configure-to-order Server	HPE ProLiant DL345 Gen11 8SFF Configure-to-order Server	HPE ProLiant DL345 Gen11 24SFF Configure-to-order Server
SKU Number	P54204-B21	P54205-B21	P54206-B21
Processor	Not included as standard	Not included as standard	Not included as standard
DIMM Slots	12-DIMM slots	12-DIMM slots	12-DIMM slots
Storage Controller	Choice of HPE Smart Array controllers		
PCIe	2 PCIe x16 Riser (Primary slot 3 and Secondary slot 6)		
Drive Cage - included	8 SFF (Backplane is included)	8 LFF (Backplane is not included)	24 SFF (Backplane is included)
Network Controller	Choice of OCP or stand up card		
Fans	Not included as standard	Not included as standard	Not included as standard
Management	Default: HPE iLO Standard with Intelligent Provisioning, HPE OneView Standard (requires download), HPE GreenLake for Compute Ops Management (subscription included)		
USB	Front: 1 USB 3.2 Gen1 + iLO service port Rear: 2 USB 3.2 Gen1 Internal: 2 USB 3.2 Gen1		

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.
- All CTO servers are Energy Star 3.0 compliant.
- CTO servers do not ship with rail kits, they need to be ordered separately

Configuration Information

CTO Server	8 LFF CTO Chassis	8 SFF CTO Chassis	24 SFF CTO Chassis
Included Drive Cage	1x 8 LFF	1x 8 SFF	3x 8 SFF
Universal Media Bay	1 Optional	1 Optional	Not available
ODD	1 Optional	1 Optional	Not available
8 SFF SAS/SATA/NVMe (Front)	Not available	2 Optional	Not available
8 SFF SAS/SATA/NVMe (Mid- plane)	Not available	Not available	1 Optional
2 SFF SAS/SATA/NVMe (Front)	1 Optional	1 Optional	Not available
2 SFF SAS/SATA/NVMe (Rear)	1 Optional	1 Optional	1 Optional
4 LFF SAS/SATA	1 Optional	Not available	Not available
4 LFF Mid-plane	1 Optional	Not available	Not available
4 LFF Rear	1 Optional	Not available	Not available

Notes:

- This applies to CTO configurations, field upgrades may differ depending field configuration.
- 8 SFF mid-plane option are available after 24 SFF at the front is selected in the order.
- 4 LFF Midplane and 4 LFF rear options are available after 12 LFF at the front is selected in the order.
- Backplane kits required to be ordered separately for 8SFF CTO servers

Step 2: Choose Required Options

Step 2a: Choose Processors

Processor Option Kits

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 9224 2.5GHz 24-core 200W Processor for HPE	P58540-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 9554P 3.1GHz 64-core 360W Processor for HPE	P53703-B21
AMD EPYC 9654P 2.4GHz 96-core 360W Processor for HPE	P53697-B21

Notes:

- For processors less than or equal to 240W, standard heat sink (P58458-B21) and 6 standard FAN kit(P58464-B21) are required.
- For processors more than or equal to 260W, performance heat sink kit (P58459-B21) and 6 performance FAN kit (P58465-B21) are required.
- For processors less than or equal to 300W is selected with 4LFF or 8SFF midtray is selected , 1U performance heat sink kit (P58457-B21) and 6 performance FAN kit (P58465-B21) are required.
- Above considerations are based on standard 8SFF, 8LFF and 24SFF CTO servers.

Step 2b: Choose Memory Options
Please select one or more memory from below.

Notes:

- Quantity of memory DIMMs selected per socket must be 1, 2, 4, 6, 8, 10 or 12.
- Memory DIMM availability with a server platform is dependent upon completion of certification testing.
- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model

Configuration Information

- For additional information, please see the **HPE DDR5 SmartMemory QuickSpecs**.
- For General Server Memory and Persistent Memory Population Rules and Guidelines, see details here: **http://www.hpe.com/docs/memory-population-rule**
- HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family, but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family.

Registered DIMMs (RDIMMs)

HPE 16GB (1x16GB) Single Rank x8 DDR5-5200 CAS-42-42-42 EC8 Registered Smart Memory Kit	P50309-B21
HPE 32GB (1x32GB) Single Rank x4 DDR5-5200 CAS-42-42-42 EC8 Registered Smart Memory Kit	P50310-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-5200 CAS-42-42-42 EC8 Registered Smart Memory Kit	P50311-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-5200 CAS-42-42-42 EC8 Registered Smart Memory Kit	P50312-B21

Notes: Mixing of x4 & x8 memory is not allowed

Step 2c: Choose Power Supplies
Select one or two power supplies from below.
Notes: Mixing of 2 different power supplies is NOT supported.

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38997-B21
HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit	P17023-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38995-B21

Notes:
- Select one or more power supplies.
- Prior to 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.

Step 2d: Choose Backplane (8 SFF server only)
If front drives are needed in the server, please select one backplane from list below
Notes: Mixing of U.3 and U.2 backplanes is not supported

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

Notes:
- Supports 8 SFF SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front bay
- Maximum two(2) this 8SFF x1 U.3 Backplane kit can be selected in the order. Please select the 24SFF CTO server (P54206-B21) for more than two(2) this 8SFF x1 U.3 Backplane kit.
- If this 8SFF x1 U.3 Backplane kit is selected, one of the following cable options should be selected:
  o Via smart array controllers at PCIe slot: HPE DL345 G11 2U 8SFF x1 NVMe TM Cable Kit (P57123-B21)
  o Direct attach: HPE DL345 G11 2U 8SFF x1 NVMe DA Cable Kit (P57121-B21)

Configuration Information

HPE ProLiant DL385 Gen11 8SFF Tri-Mode U.3 x4 BC Backplane Kit   P55083-B21
Notes:
- Supports 8 SFF of SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front bay
- Maximum 3 of this 8SFF x4 U.3 Backplane kit can be selected in the order.
- If One(1) of this 8SFF x4 U.3 Backplane kit is selected, one of the following cable options should be selected:
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 8NVMe x4 BP SA Cable Kit (P57127-B21)
    - o direct attach: HPE DL345 Gen11 8NVMe x4 DA Cable Kit (P57124-B21) and not able to select HPE DL345 G11 4PCIE Enablement Kit (P57116-B21).
- if Three(3) of this 8SFF x4 U.3 Backplane are in the order, one of the following cable options should be selected:
  - o Direct attach: 24SFF x2 NVMe Direct Attach Cable Kit (P57126-B21)
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 24NVMe x2 BP SA Cable Kit (P57129-B21) or HPE DL345 Gen11 24NVMe x4 BP SA Cable Kit (P57128-B21)

Step 3: Choose Additional Factory Integratable Options
One of the following from each list may be selected if desired at time of factory integration

HPE ProLiant DL345 Gen11 8SFF x4 U.3 NVMe Box 3 Direct Attach FIO Drive Cage Kit   P59255-B21
Notes:
- This is a factory integrated only option.
- This kit is for 8 SFF NVMe direct attach.

HPE ProLiant DL345 Gen11 4LFF SAS/SATA 12G LP Rear FIO Drive Cage Kit   P57113-B21
Notes:
- This is a factory integrated only option.
- Supports 4 LFF of SAS/SATA Basic Carrier (BC) Drives at the Rear Bay
- Requires 6 performance fan kit (P58465-B21).
- Requires 4LFF x1 Backplane kit (P57114-B21) in the order.
- If this 4 LFF x1 Rear Bay Backplane kit is selected, no additional cable kit selection required for smart array controllers at PCIe slot, OCP slot or direct attach as the cable Included in the kit.
- Maximum one(1) 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 4 LFF x1 Rear Bay Backplane kit (P57113-B21) could be selected in the order at the rear bay.

HPE ProLiant DL385 Gen11 x16 Primary FIO Riser Kit for LFF Rear Cage   P55098-B21
Notes:
- Supports one(1) PCIe Gen5 x16 risers at the primary riser slot 3 or Secondary riser slot 6.
- Requires 4LFF rear bay (P57113-B21) is in the orderMaximum 2 of this riser kit could be selected in the order

HPE Converged Infrastructure Management Software

HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU   P8B31A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU   E5Y43A

Configuration Information

HPE Security Options

HPE Trusted Supply Chain FIO Configuration   P36394-B21
HPE Trusted Supply Chain E-LTU   R6X85AAE

Notes:
- Intrusion Cable Kit (P55713-B21) must be selected with the Trusted Supply Chain Config
- If Trusted Supply Chain config is selected, only one instance of the E-LTU software option is required per order (not per server): HPE Trusted Supply Chain E-LTU.

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

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.

Core Options

Software as a Service Management

HPE GreenLake for Compute Ops Management

Base SKU

HPE GreenLake for Compute Ops Management Standard 3-year Upfront ProLiant SaaS	R6Z89AAE

Upgrade SKUS

HPE GreenLake for Compute Ops Management Standard 1-year Upfront ProLiant SaaS	R6Z88AAE
HPE GreenLake for Compute Ops Management Standard 5-year Upfront ProLiant SaaS	R6Z90AAE
HPE GreenLake for Compute Ops Management Standard 1-year Monthly ProLiant SaaS	R6Z91AAE
HPE GreenLake for Compute Ops Management Standard 3-year Monthly ProLiant SaaS	R6Z92AAE
HPE GreenLake for Compute Ops Management Standard 5-year Monthly ProLiant SaaS	R6Z93AAE
HPE GreenLake for Compute Ops Management Standard 1-year Quarterly ProLiant SaaS	R6Z94AAE
HPE GreenLake for Compute Ops Management Standard 3-year Quarterly ProLiant SaaS	R6Z95AAE
HPE GreenLake for Compute Ops Management Standard 5-year Quarterly ProLiant SaaS	R6Z96AAE
HPE GreenLake for Compute Ops Management Standard 3-year Annual ProLiant SaaS	R6Z97AAE
HPE GreenLake for Compute Ops Management Standard 5-year Annual ProLiant SaaS	R6Z98AAE
HPE GreenLake for Compute Ops Management Enhanced 1-year Upfront ProLiant SaaS	R7A10AAE
HPE GreenLake for Compute Ops Management Enhanced 3-year Upfront ProLiant SaaS	R7A11AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Upfront ProLiant SaaS	R7A12AAE
HPE GreenLake for Compute Ops Management Enhanced 1-year Monthly ProLiant SaaS	R7A13AAE
HPE GreenLake for Compute Ops Management Enhanced 3-year Monthly ProLiant SaaS	R7A14AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Monthly ProLiant SaaS	R7A15AAE
HPE GreenLake for Compute Ops Management Enhanced 1-year Quarterly ProLiant SaaS	R7A16AAE
HPE GreenLake for Compute Ops Management Enhanced 3-year Quarterly ProLiant SaaS	R7A17AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Quarterly ProLiant SaaS	R7A18AAE
HPE GreenLake for Compute Ops Management Enhanced 3-year Annual ProLiant SaaS	R7A19AAE
HPE GreenLake for Compute Ops Management Enhanced 5-year Annual ProLiant SaaS	R7A20AAE

HPE OneView

HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE

Notes: For customers purchasing HPE GreenLake for Compute Ops Management, without a hardware purchase or a BTO purchase, use this base SKU within ASQ order:

HPE GreenLake for Compute Ops Management Base SaaS	R6Z73AAE

For more information, visit the HPE GreenLake for 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

HPE Unique Options

Risers

Notes: All the CTO servers are default ship with 2 PCIe Gen5 x16 risers, one at the primary riser slot 3 and another at the secondary riser slot 6.

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

Notes:
- Supports 4 PCIe Gen5 x16 risers, three(3) at the primary riser slot 1/2/3 and one(1) at the secondary riser slot 6.
- Can't be selected if 4LFF rear bay (P57113-B21) is in the order.
- Maximum 1 of 4 PCIe enablement kit (P57116-B21) or 6 PCIe enablement kit (P5117-B21) can be selected in the order.

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

Notes:
- Supports 6 PCIe Gen5 x16 risers, three(3) at the primary riser slot 1/2/3 and three(3) at the secondary riser slot 4/5/6.
- Can't be selected if 4LFF rear bay (P57113-B21) is in the order.
- Maximum one(1) 4 PCIe enablement kit (P57116-B21) or 6 PCIe enablement kit (P5117-B21) can be selected in the order.

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

Notes:
- Supports 1 PCIe Gen5 x16 risers at the Secondary riser slot 6.
- Require 4LFF rear bay (P57113-B21) is in the order
- Maximum one(1) this riser kit could be selected in the order
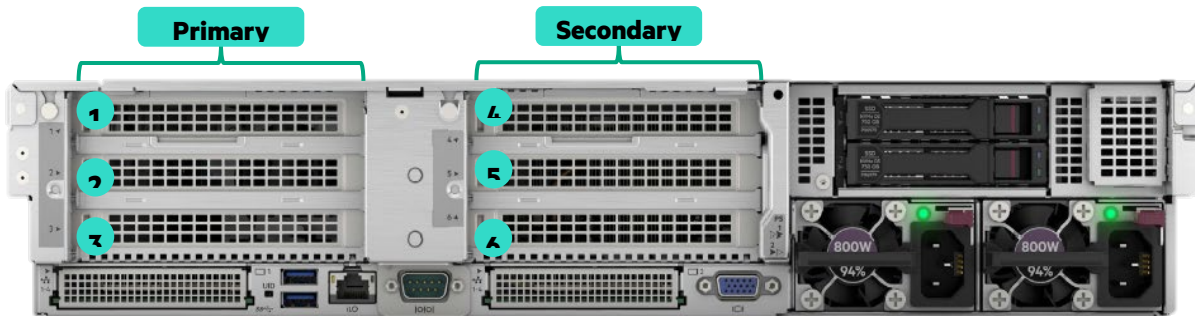
Additional Options

Riser Information							
Description	**Riser position - Primary**			**Riser position - Secondary**		**Total Slots**	**Bus width**
	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6		
Default Riser	N/A	N/A	D	N/A	N/A	D	2 FHHL	X16
HPE ProLiant DL345 Gen11 4 PCIe x16 Enablement Kit	O	O	D	N/A	N/A	D	4 FHHL	X16
HPE ProLiant DL345 Gen11 6 PCIe x16 Enablement Kit	O	O	D	O	O	D	6 FHHL	X16
HPE ProLiant DL385 Gen11 x16 Primary FIO Riser Kit for LFF Rear Cage	N/A	N/A	O	N/A	N/A	O	1 or 2 FHHL	X16
HPE ProLiant DL385 Gen11 x16 Low Profile Secondary Riser Kit	N/A	N/A	N/A	N/A	N/A	O	1 HHHL	X16

Notes:

– D = Default on server; O = Optional; N/A = not supported or slot/connector not present.
– When 4LFF rear drive bay loaded, 2 Primary riser kit (P55098-B21) or 1 Primary riser kit (P55098-B21) plus 1 Low profile riser kit (P59260-B21) with NS204-u boot devlice must be in the order.

Cooling

HPE ProLiant DL3X5 Gen11 CPU Performance 1U Heat Sink Kit	P58457-B21
HPE ProLiant DL3X5 Gen11 Standard 2U Heat Sink Kit	P58458-B21
HPE ProLiant DL3X5 Gen11 Performance 2U Heat Sink Kit	P58459-B21

Notes:

– For processors less than or equal to 240W, standard heat sink (P58458-B21) and 6 standard FAN kit(P58464-B21) are required.
– For processors more than or equal to 260W, performance heat sink kit (P58459-B21) and 6 performance FAN kit (P58465-B21) are required.
– For processors less than or equal to 300W is selected with 4LFF or 8SFF midtray is selected , 1U performance heat sink kit (P58457-B21) and 6 performance FAN kit (P58465-B21) are required.

HPE ProLiant DL3X5 Gen11 2U Standard Fan Kit	P58464-B21
HPE ProLiant DL3X5 Gen11 2U Performance Fan Kit	P58465-B21

Notes:

– Requires to select 6 fan kits in every DL345 Gen11 server
– For processors less than or equal to 240W, standard heat sink (P58458-B21) and 6 standard FAN kit(P58464-B21) are required.
– For processors more than or equal to 260W, performance heat sink kit (P58459-B21) and 6 performance FAN kit (P58465-B21) are required.
– 6 Performance Fan Kit (P58462-B21) are required if any of the below options is in the order
  o 8SFF/4LFF Midtray (P57108-B21, P57109-B21, P57112-B21)
  o 2SFF rear bay (P57110-B21) or 4LFF rear bay(P57113-B21)
  o 100/200GB network adapters
  o InfiniBand network adapters

Additional Options

Cooling options summary			
CPU cTDP	=< 240W	260W – 400W	With Midtray <= 300 W
Heatsink	Standard 2U (P58458-B21)	Performance 2U (P58459-B21)	Performance 1U (P58457-B21)
Fans	6 Standard (P58464-B21)	6 Performance (P58465-B21)	6 Performance (P58465-B21)

Notes:
- The cooling options summary are supported base on SFF, LFF and EDSFF CTO servers.
- The cooling options summary of GPU CTO server will be available soon.

Drive Cage

Notes:
- Mixing of U.3 and U.2 cage & backplane kit is not supported.
- Mixing of 8SFF x4 backplane kit and 8SFF x1 backplane kit is not supported
- Maximum 1 of 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) could be selected in the order

HPE ProLiant DL345 Gen11 2U 8SFF x1 Tri-Mode U.3 BC Midplane Drive Cage Kit   P57108-B21

Notes:
- Supports 8 SFF of SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the Mid Tray
- Requires processor less than or equal to 300W.
- Includes cables to smart array controllers at PCIe slot.
- Maximum one(1) this 8SFF x1 U.3 Midplane Backplane kit can be selected in the order.
- Requires 6 performance fan kit (P58465-B21)
- Requires 24SFF CTO server (P54206-B21) in the order

HPE ProLiant DL345 Gen11 2U 8SFF x4 Tri-Mode U.3 BC Midplane Drive Cage Kit   P57109-B21

Notes:
- Supports 8 SFF of SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the Mid Tray
- Requires processor less than or equal to 300W.
- Requires 6 performance fan kit (P58465-B21)
- Includes both Direct attach and smart array cables
- Maximum one(1) this 8SFF x4 U.3 Midplane Backplane kit can be selected in the order.
- If this 8SFF x4 U.3 Midplane Backplane kit is selected, no additional cable kit selection required for either direct attach or via smart array controllers at PCIe slot.
- Requires 8SFF CTO server (P54205-B21) in the order.

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

Notes:
- Supports 2 SFF of SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front bay or Rear Bay.
- Includes Smart Array cables
- Maximum one(1) 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) could be selected in the order
- Maximum one(1) 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 4 LFF x1 Rear Bay Backplane kit (P57113-B21) could be selected in the order at the rear bay.
- If SFF media bay P57857-B21 is in the order, this 2SFF drive cage will be installed at the rear.

Additional Options

HPE ProLiant DL345 Gen11 2U 2SFF x4 Tri-Mode 24G U.3 BC Side-by-Side Drive Cage Kit   P57111-B21
Notes:
— Supports 2 SFF of SAS/SATA/ NVMe (U.3) Basic Carrier (BC) Drives at the front bay.
— Includes cables smart array controllers at OCP slot.
— Maximum one(1) 2SFF x4 U.3 BC Front/Tertiary Stackable Drive Cage Kit (P57110-B21) or 2SFF x4
  U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) could be selected in the order
— Maximum one(1) 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) or 4 LFF x1 Backplane kit
  (P57114-B21) could be selected in the order
— Requires 8LFF CTO server (P54204-B21) in the order.

HPE ProLiant DL345 Gen11 4LFF SAS/SATA 12G LP Midplane Drive Cage Kit   P57112-B21
Notes:
— Supports 4 LFF of SAS/SATA Basic Carrier (BC) Drives at the Mid Tray
— Requires processor less than or equal to 300W.
— Requires 6 performance fan kit (P58465-B21) and 1 1U performance heat sink (P58457-B21) in the
  order
— Requires 4LFF x1 Backplane kit (P57114-B21) in the order.
— Maximum one(1) this 4 LFF x1 Midplane Backplane kit can be selected in the order.
— If this 4 LFF x1 Midplane Backplane kit is selected, no additional cable kit selection required for smart
  array controllers at PCIe slot or direct attach as the cable Included in the kit.

HPE ProLiant DL345 Gen11 4LFF x1 SAS/SATA 12G Front Backplane Kit   P57114-B21
Notes:
— Supports 4 LFF of SAS/SATA Basic Carrier (BC) Drives at the front bay
— Maximum one(1) this 4 LFF x1 Midplane Backplane kit can be selected in the order.
— Maximum one(1) 2SFF x4 U.3 BC Side-by-Side Drive Cage Kit (P57111-B21) or 4LFF x1 Backplane kit
  (P57114-B21) could be selected in the order
— If this 4 LFF x1 Backplane kit is selected, no additional cable kit selection required for smart array
  controllers at PCIe slot or direct attach as the cable Included in the kit.

HPE ProLiant DL3X5 Gen11 SFF Universal Media Bay Kit   P57857-B21
Notes:
— This Universal Media Bay kit includes cage, 2 USB and 1 DP port, supports 1 Optical Drives.
— Maximum one(1) this Universal Media Bay Kit can be selected in the order.
— Requires 8SFF CTO server (P54205-B21) in the order.
— If the 8SFF CTO server (P54205-B21) and Optical Drives (701498-B21, 726536-B21 and 726537-
  B21) are selected in the order, this Universal Media Bay Kit and ODD cable kit (P59602-B21) must in
  the order.

HPE Boot Controllers

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device   P48183-B21
HPE ProLiant DL3X5 Gen11 NS204i-u NVMe Hot Plug Boot Device Cable Kit   P57013-B21
Notes:
— The cable kit (P57013-B21) and Secondary LP riser must be selected together with the NS204i-u
  storage device.
— RAID 1 is preconfigured on this option and additional RAID cannot be applied on this Boot Device
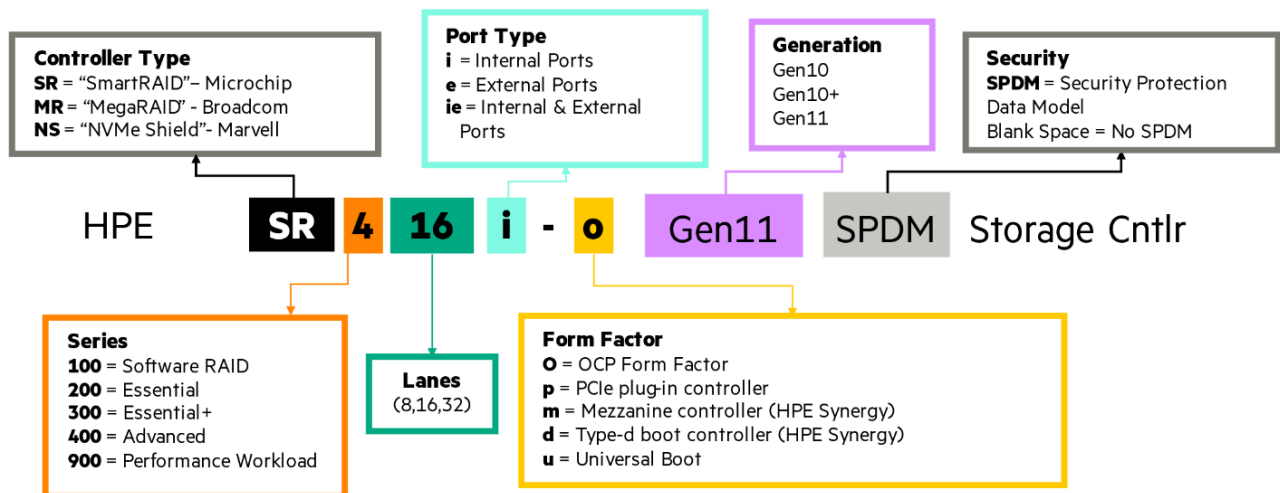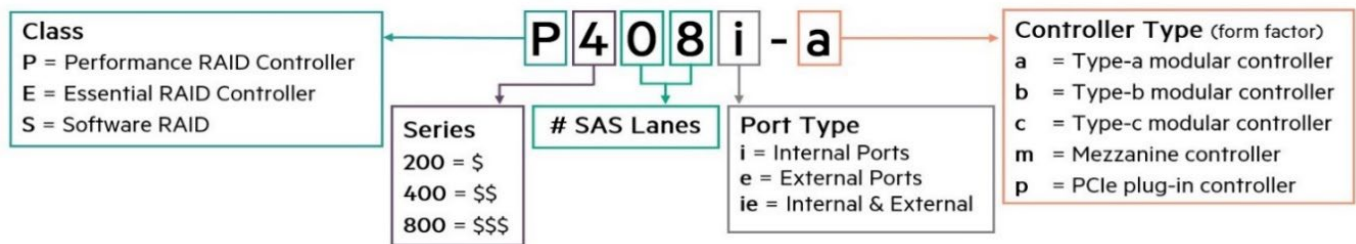
Additional Options

HPE Optical Drives

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21
HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21
HPE Mobile USB DVD-RW Optical Drive	701498-B21
HPE ProLiant DL380 Gen11 LFF ODD/Display Port Enablement Kit	P52150-B21
HPE ProLiant DL345 Gen11 ODD Cable Kit	P59602-B21

Notes:

– If optical drive is selected along with 8 LFF CTO server (P54204-B21), then LFF ODD/DP Enablement Kit (P52150-B21) and ODD Cable Kit (P59602-B21) must be selected in the order.

– If optical drives is selected along with 8 LFF CTO server (P54204-B21), then 4LFF x1 SAS/SATA 12G Front Backplane Kit (P57114-B21) could not in the order to support 12 LFF drives at the front bay.

– If the 8SFF CTO server (P54205-B21) and Optical Drives (701498-B21, 726536-B21 and 726537-B21) are selected in the order, then the Universal Media Bay Kit (P57857-B21) and ODD cable kit (P59602-B21) must in the order.

HPE Smart Array Controllers

Additional Options

Smart Array Controllers
Notes:
– When selecting SR RAID controllers for external storage (E208e, 804398-B21) and MR RAID controllers for internal storage(MR216i/MR416i/MR408i) in the order, please be aware these two products use different RAID configuration tools.
– Not supporting mixing of MR (MegaRAID) series internal controllers and SR (SmartRAID) series internal controllers
– PCIe plug-in form factor controllers are not supported in Secondary riser slot 6 position.
– For more information on the HPE Gen11 Storage Controller, please refer to:
  HPE Compute MR Gen11 Controllers Quick Spec
  HPE Compute SR Gen11 Controllers Quick Spec

Essential RAID Controllers
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)
– For more information on the HPE Smart Array E208i-p SR Gen10 Controller, please refer to the
  QuickSpecs

Tri-mode RAID Controllers
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
– Does not occupy a PCIe expansion slot
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
– Does not occupy a PCIe expansion slot
– 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) OR Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21) must be selected with this controller.
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
– Does not occupy a PCIe expansion slot
– 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) OR Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21) must be selected with this controller.
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
– 96W Smart Stg Li-ion Batt 145mm Kit (P01366-B21) OR Smart Hybrid Capacitor w/ 145mm Cbl (P02377-B21) must be selected with this controller.

Controller Battery Cable Kits
HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit   P02377-B21
HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit   P01366-B21
Notes: The two 145mm cable kit can't be selected together

Additional Options

HPE Drives

Enterprise - 12G SAS – SFF/LFF Drives

HPE 300GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P28028-B21
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 900GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P40432-B21
HPE 600GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD	P53560-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

Midline - 12G SAS - SFF Drives

HPE 2TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28505-B21
HPE 1TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty HDD	P53563-B21

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 18TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37669-B21
HPE 10TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD	P53556-B21
HPE 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53553-B21

Midline - 6G SATA - SFF Drives

HPE 1TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty HDD	P28610-B21
HPE 2TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty 512e HDD	P28500-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 14TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD	P09165-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 16TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23449-B21
HPE 18TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37678-B21
HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD	P53557-B21
HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53554-B21

SED (Self-Encryption Drive) Hard Drives

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

Notes:
— Requirements for Tri-mode controller SED support

Additional Options

- o   TPM is not required for Local Key Management as key is stored in controller
- o   iLO Advanced is required for Remote Key Management. Key is stored in remote key manager (Ex. ESKM)

SSD Selection

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

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

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

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

Mixed Use SAS– LFF- Solid State Drives

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

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

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
HPE 480GB SATA 6G Mixed Use SFF BC PM897 SSD	P44011-B21
HPE 960GB SATA 6G Mixed Use SFF BC PM897 SSD	P44012-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC PM897 SSD	P44013-B21

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

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 PM893 SSD	P44007-B21
HPE 960GB SATA 6G Read Intensive SFF BC PM893 SSD	P44008-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC PM893 SSD	P44009-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893 SSD	P44010-B21

Read Intensive – 6G SATA - LFF – Solid State Drives

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

Write Intensive – NVMe – SFF – Solid State Drives

HPE 400GB NVMe Gen4 High Performance Low Latency Write Intensive SFF BC U.2 P5800X SSD	P51465-B21
HPE 800GB NVMe Gen4 High Performance Low Latency Write Intensive SFF BC U.2 P5800X SSD	P51467-B21

Additional Options

Read Intensive - NVMe - SFF - Solid State Drives

HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51453-B21
HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51455-B21
HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.2 P5520 SSD	P51457-B21
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

Mixed Use - NVMe - SFF - Solid State Drives

HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51459-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51461-B21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.2 P5620 SSD	P51463-B21
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 Networking

Notes:

− Requires 6 Performance FAN kit when 100/200 Gigabit Ethernet Adapters or InfiniBand adapters in the order.
− 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 adapters

Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P21106-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P51178-B21

10 Gigabit Ethernet adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE	P26253-B21
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P26259-B21

10/25 Gigabit Ethernet adapters

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P26262-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P26264-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P42044-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P08458-B21

100/200 Gigabit Ethernet adapters

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

Notes:

− The 100/200 Gigabit Ethernet Adapters does not support in Secondary riser slot 6 position.
− Maximum 3 100/200 Gigabit adapters are supported on HPE DL345 Gen11 with 4 riser enablement kit (P57116-B21) in the order.
− Maximum 5 100/200 Gigabit adapters are supported on HPE DL345 Gen11 with 6 riser enablement kit (P57117-B21) in the order.

Additional Options

OCP Adapters
1 Gigabit Ethernet OCP adapters

Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21

10 Gigabit Ethernet OCP Adapters

Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21

10/25 Gigabit Ethernet OCP adapters

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21

100/200 Gigabit Ethernet adapters

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

Notes:
- Requires OCP upgrade cable kit (P56658-B21).
- The 100/200 Gigabit Ethernet Adapters does not support in OCP slot 22 position.
- Requires 6 Performance FAN kit in the order.

HPE InfiniBand

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 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter	P31323-B21
HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter	P31348-B21

Notes:
- Requires 6 Performance FAN kit when InfiniBand adapters in the order.
- Requires OCP upgrade cable kit (P56658-B21) if 200 Gigabit OCP adapters (P31323-B21, P31348-B21) are selected in the order.
- The infiniband Ethernet Adapters does not support in both OCP slot 22 position and Secondary riser slot 6 position.
- For more information, please visit: **HPE InfiniBand Options for HPE ProLiant and Apollo Servers**

HPE ProLiant DL325 Gen11 OCP Upgrade Cable Kit	P56658-B21

Notes: Required to be in order when the following options are selected
  - o   OCP InfiniBand network adapters (P31323-B21, P31348-B21)
  - o   BCM 57504 10/25GbE 4p SFP28 Adaptor (P26269-B21)
  - o   E810 100GbE 2p QSFP28 OCP3 Adptr (P22767-B21)

Additional Options

HPE Power Supplies

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

Notes:

– Prior to 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

Notes: Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).

HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38995-B21

Notes: Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).

HPE 1600W Flex Slot -48VDC Hot Plug Power Supply Kit	P17023-B21

Notes:

– Flex Slot universal power supplies support power efficiency of up to 94% and support both 277VAC/380VDC power inputs.

– HPE 1600W DC PSU Power Lug Option Kit (P36877-B21) must be selected along with this power supplies.

HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38997-B21

Notes:

– Flex Slot Platinum Plus power supplies support power efficiency of up to 94% and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).

– The power supply selected only supports high line voltage (200VAC to 240VAC)

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)

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 for Open Distributed Infrastructure Management 3-year 24x7 LTU	R4H59A
HPE iLO for Open Distributed Infrastructure Management 1-year 24x7 LTU	R4H60A
HPE iLO for Open Distributed Infrastructure Management 3-year 24x7 E-LTU	R4H61AAE
HPE iLO for Open Distributed Infrastructure Management 1-year 24x7 E-LTU	R4H62AAE
HPE iLO for Open Distributed Infrastructure Management 3-year 24x7 AKA Tracking E-LTU	R4H63AAE
HPE iLO for Open Distributed Infrastructure Management 1-year 24x7 AKA Tracking E-LTU	R4H64AAE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21

Additional Options

HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features   512487-B21

HPE Converged Infrastructure Management Software

HPE OneView Standard 1yr 9x5 Support Flexible Quantity E-RTU	K6F98AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView Upgrade from Insight Management 3yr 24x7 Support 1-server LTU	F6Q91A
HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Track 1-server LTU	E5Y36A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support Bundle Track 1-server LTU	E5Y44A
HPE OneView Upgrade from Insight Management including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y45AAE

Notes: Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be **downloaded**.

HPE Security

HPE Bezel Lock Kit	875519-B21
HPE Gen11 2U Bezel Kit	P50400-B21
HPE ProLiant DL385 Gen11 Intrusion Cable Kit	P55713-B21

Notes: Bezel lock kit (875519-B21) requires bezel kit in the order (P50400-B21)

HPE Cable Options

HPE ProLiant DL345 Gen11 2U 8SFF x1 NVMe Direct Attach Cable Kit   P57121-B21

Notes:
— This cable kit is used to support 8 SFF direct attach
— If the 8SFF x1 U.3 Backplane kit (P55082-B21) is selected, one of the following cable options should be selected:
  o via smart array controllers at PCIe slot: HPE DL345 G11 2U 8SFF x1 NVMe Cable Kit (P57123-B21)
  o direct attach: HPE DL345 G11 2U 8SFF x1 NVMe DA Cable Kit (P57121-B21)

HPE ProLiant DL345 Gen11 2U 8SFF SR932i-p x1 NVMe Tri-Mode Cable Kit   P57122-B21

Notes: This cable kit is used to support the smart array controllers at the PCIe slot

HPE ProLiant DL345 Gen11 2U 8SFF x1 NVMe Tri-Mode Cable Kit   P57123-B21

Notes:
— This cable kit is used to support the smart array controllers at the PCIe slot
— If the 8SFF x1 U.3 Backplane kit (P55082-B21) is selected, one of the following cable options should be selected:
  o via smart array controllers at PCIe slot: HPE DL345 G11 2U 8SFF x1 NVMe Cable Kit (P57123-B21)
  o direct attach: HPE DL345 G11 2U 8SFF x1 NVMe DA Cable Kit (P57121-B21)

HPE ProLiant DL345 Gen11 2U 8SFF x4 NVMe Direct Attach Cable Kit   P57124-B21

Notes:
— This cable kit is used to support 8 SFF direct attach

Additional Options

- If One(1) the 8SFF x4 U.3 Backplane kit (P55083-B21) is selected, one of the following cable options should be selected:
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 8NVMe x4 BP SA Cable Kit (P57127-B21)
  - o direct attach: HPE DL345 Gen11 8NVMe x4 DA Cable Kit (P57124-B21) and not able to select HPE DL345 G11 4PCIE Enablement Kit (P57116-B21).

HPE ProLiant DL345 Gen11 2U 24SFF x2 NVMe Direct Attach Cable Kit   P57126-B21

Notes:

- This cable kit is used to support 24 SFF direct attach
- if Three of the 8SFF x4 U.3 Backplane (P55083-B21) are in the order, one of the following cable options should be selected:
  - o Direct attach: 24SFF x2 NVMe Direct Attach Cable Kit (P57126-B21)
  - o via smart array controllers at PCIe slot or OCP slot : HPE DL345 Gen11 24NVMe x2 BP SA CA Kit (P57129-B21)

HPE ProLiant DL345 Gen11 2U 8SFF x4 NVMe Tri-Mode Cable Kit   P57127-B21

Notes:

- This cable kit is used to support 8SFF the smart array controllers at the PCIe slot or OCP slot
- If the 8SFF x4 U.3 Backplane kit (P55083-B21) is selected, one of the following cable options should be selected:
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 8NVMe x4 Cable Kit (P57127-B21)
  - o direct attach: HPE DL345 Gen11 8NVMe x4 DA Cable Kit (P57124-B21) and not able to select HPE DL345 G11 4PCIE Enablement Kit (P57116-B21), or HPE DL345 Gen11 24NVMe x2 Cable Kit (P57129-B21) supports 3 of the 8SFF x4 U.3 Backplane kit.
  - o

HPE ProLiant DL345 Gen11 2U 24SFF x4 NVMe Tri-Mode Cable Kit   P57128-B21

Notes:

- This cable kit is used to support 8SFF the smart array controllers at the PCIe slot.
- if Three(3) of the 8SFF x4 U.3 Backplane kit (P55083-B21) are in the order, one of the following cable options should be selected:
  - o Direct attach: 24SFF x2 NVMe Direct Attach Cable Kit (P57126-B21)
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 24NVMe x2 BP SA CA Kit (P57129-B21) or HPE DL345 Gen11 24NVMe x4 BP SA CA Kit (P57128-B21)

HPE ProLiant DL345 Gen11 2U 24SFF x2 NVMe Tri-Mode Cable Kit   P57129-B21

Notes:

- This cable kit is used to support 24SFF the smart array controllers at the PCIe slot.
- If the 8SFF x4 U.3 Backplane kit (P55083-B21) is selected, one of the following cable options should be selected:
  - o via smart array controllers at PCIe slot or OCP slot: HPE DL345 Gen11 8NVMe x4 Cable Kit (P57127-B21)
  - o direct attach: HPE DL345 Gen11 8NVMe x4 DA Cable Kit (P57124-B21) and not able to select HPE DL345 G11 4PCIE Enablement Kit (P57116-B21), or HPE DL345 Gen11 24NVMe x2 Cable Kit (P57129-B21) supports 3 of the 8SFF x4 U.3 Backplane kit.

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

Notes:

- This cable kit is used to support 8 LFF the smart array controllers at the PCIe slot
- if 8 LFF x1 Backplane (Shipped with the 8 LFF CTO server) is in the order, one of the following cable options should be selected:
  - o via smart array controllers at PCIe slot: 8LFF x1 SAS/SATA Cable Kit (P59254-B21)

Additional Options

     o   direct attach: no additional cable kit selection required

HPE Alletra 41X0 Serial Port Cable and Enablement Kit   P50887-B21

Notes: This cable kit is used to support optional serial port at the rear of the server.

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
http://www.hpe.com/storage/BURAcompatibility.

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

Rail Kits

Notes:

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

– CTO Models do not ship with rail kits, they need to be ordered seperately

HPE DL3XX Gen11 Easy Install Rail 2 Kit   P52351-B21
HPE DL38X Gen10 Plus 2U Cable Management Arm for Rail Kit   P22020-B21

HPE Racks

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

Additional Options

HPE Power Distribution Units (PDUs)
- Please see the **HPE Basic Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Metered Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Intelligent Power Distribution Unit (PDU) QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Metered and Switched Power Distribution Units (PDU) QuickSpecs** for information on these products and their specifications.

HPE Uninterruptible Power Systems (UPS)
- To learn more, please visit the **HPE Uninterruptible Power Systems (UPS) web page.**
- Please see the **HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs** for information on these products and their specifications.
- Please see the **HPE Line Interactive Single Phase UPS QuickSpecs** for information on these products and their specifications.

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

HPE Support Services

HPE Install ProLiant DL3xx Service	U4506E
HPE Installation and Startup DL3xx Service	U4507E
HPE Install & Startup ProLiant Entry 300 Series	
Tech Care	
HPE 5 Year Tech Care Basic DL345 GEN11 Service	H78Z3E
HPE 5 Year Tech Care Basic wDMR DL345 GEN11 Service	H78Z4E
HPE 7 Year Tech Care Essential wDMR DL345 GEN11 Service	H79B7E
HPE 3 Year Tech Care Basic DL365 GEN11 Service	H79B8E

Memory
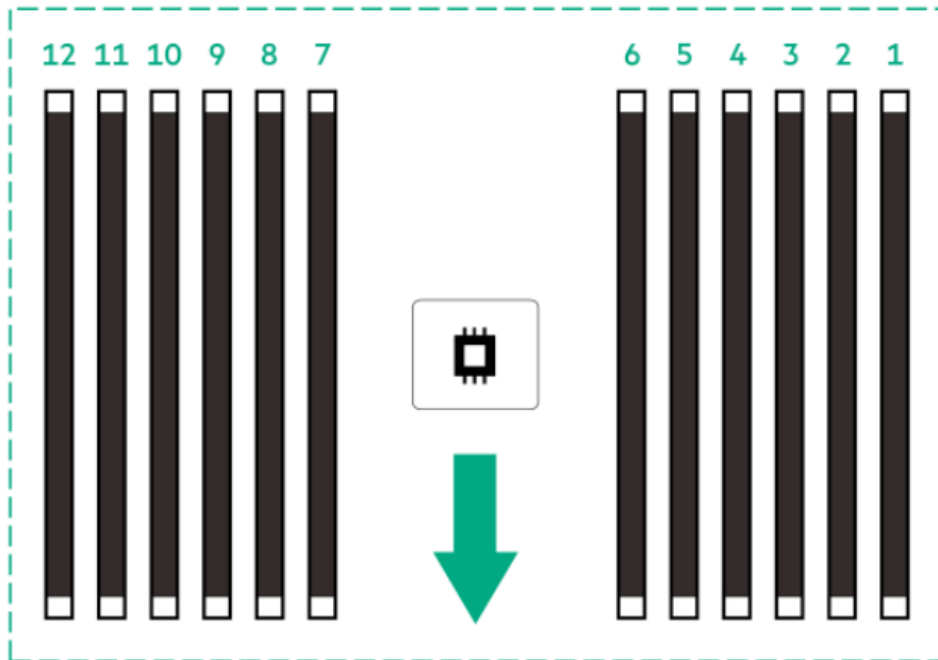

The arrow points to the front of the server

General Memory Population Rules and Guidelines:

- Install DIMMs only if the corresponding processor is installed.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.
- To realize the performance memory capabilities listed in this document, HPE DDR5 SmartMemory is required. For additional information, please see the: **HPE DDR5 Smart Memory QuickSpecs**
- For General Server Memory and Persistent Memory Population Rules and Guidelines, see details here: **http://www.hpe.com/docs/memory-population-rules**
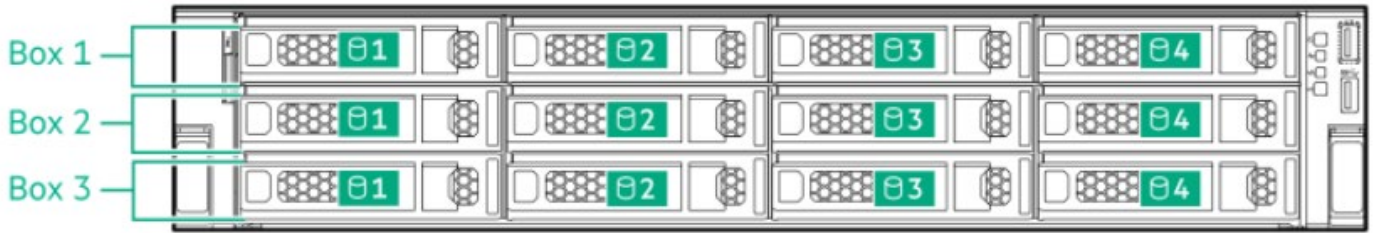
Storage

12 LFF Front Panel
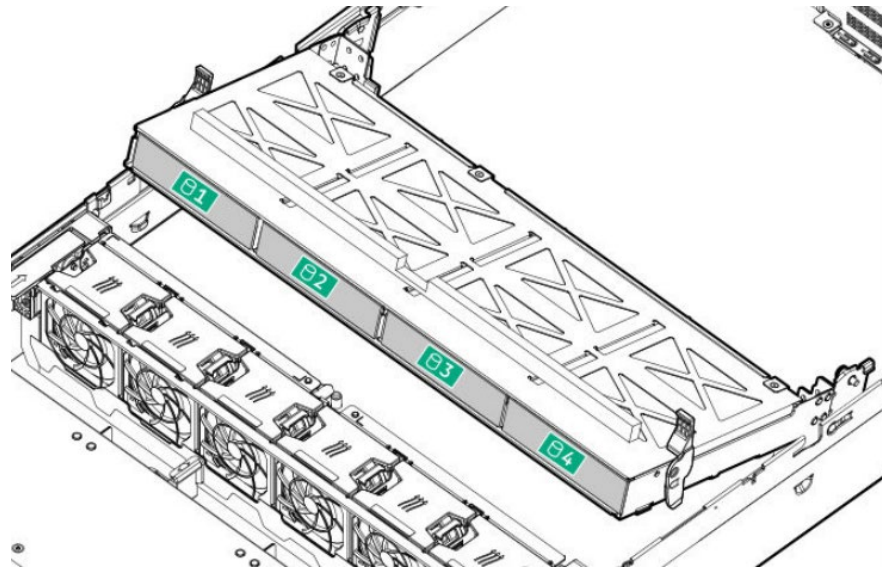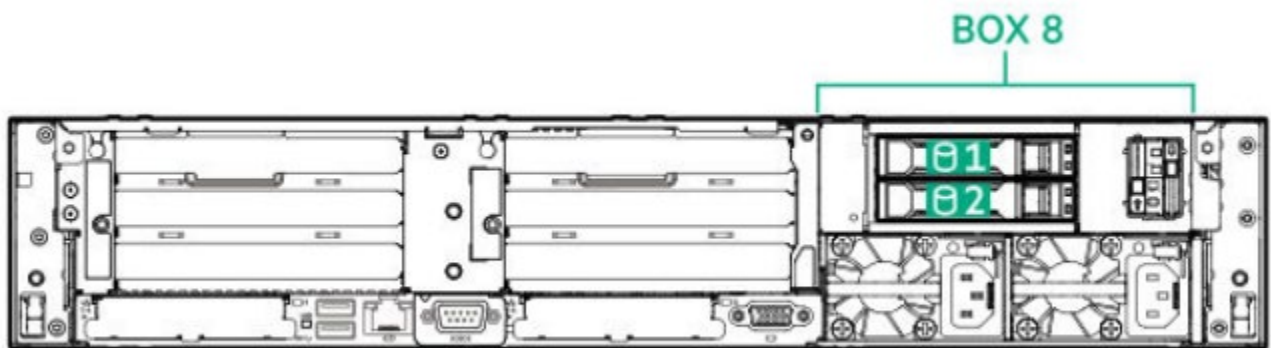

4 LFF Mid Tray
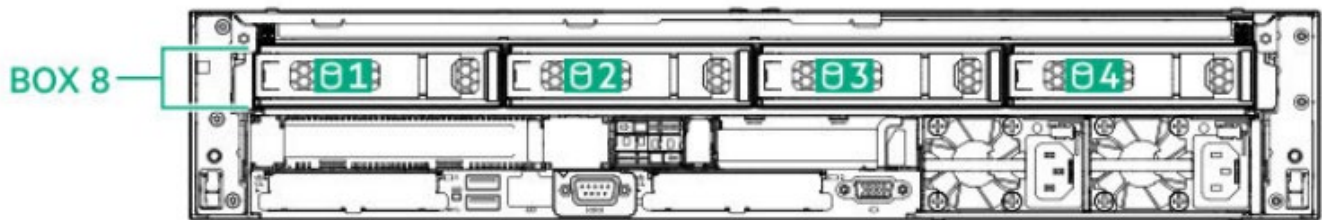
Rear Panel + rear 4 LFF drives

Storage
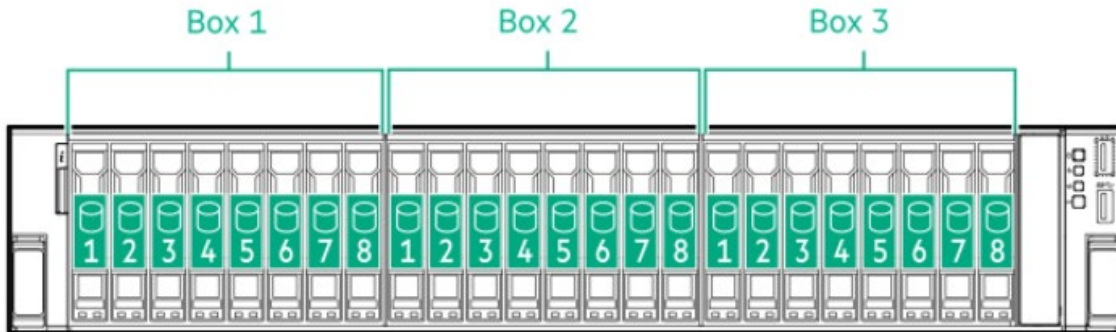
24 SFF Front Panel
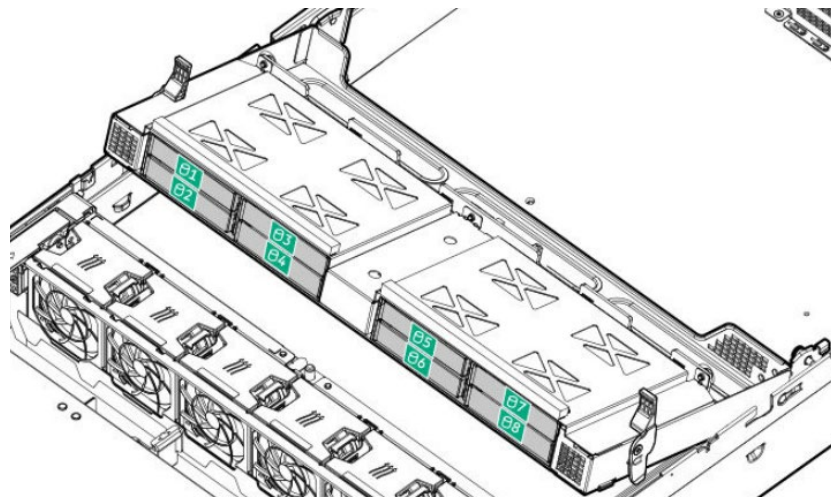
8 SFF Mid Tray

Rear Panel + rear 2 SFF drives

Technical Specifications

System Unit

Dimensions (Height x Width x Depth)
- **SFF chassis**
  8.75 x 44.8 x 64.6 cm
  3.45 x 17.64 x 25.45 in
- **LFF chassis:**
  8.75 x 44.8 x 66.3 cm
  3.45 x 17.64 x 26.11 in
- **Package:**
  27 x 60 x 91.77 cm
  10.63 x 23.62 x 36.13 in

Weight (approximate)

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

Input Requirements (per power supply)

Rated Line Voltage
- 100 to 120 VAC
- 200 to 240 VAC

Technical Specifications

BTU Rating

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

Power Supply Output (per power supply)

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

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

System Inlet Temperature

- **Standard Operating Temperature**
  10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

  System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
- **Extended Ambient Operating Temperature**
  For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:**http://www.hpe.com/servers/ashrae**

  For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL:**http://www.hpe.com/servers/ashrae**

  System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
- **Non-operating**
  -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

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

Technical Specifications

Altitude
- **Operating**
  3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
- **Non-operating**
  9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Emissions Classification (EMC) – Regulatory Information
To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:
http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

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

Idle	
LWAd	5.5 B Base
LpAm	41 dBA Base
Kv	0.4 B Base
Operating	
LWAd	5.6 B Base
LpAm	42 dBA Base
Kv	0.4 B Base

Notes:
- The declared mean A-weighted sound power level, LWA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample, rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance, when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m and Kv.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.

Technical Specifications

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

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

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

Summary of Changes

Date	Version History	Action	Description of Change
10-Nov-2022	Version 1	New	New QuickSpecs.

Copyright

Make the right purchase decision.
Contact our presales specialists.

Chat now (sales)

Call now

Get updates

Hewlett Packard
Enterprise