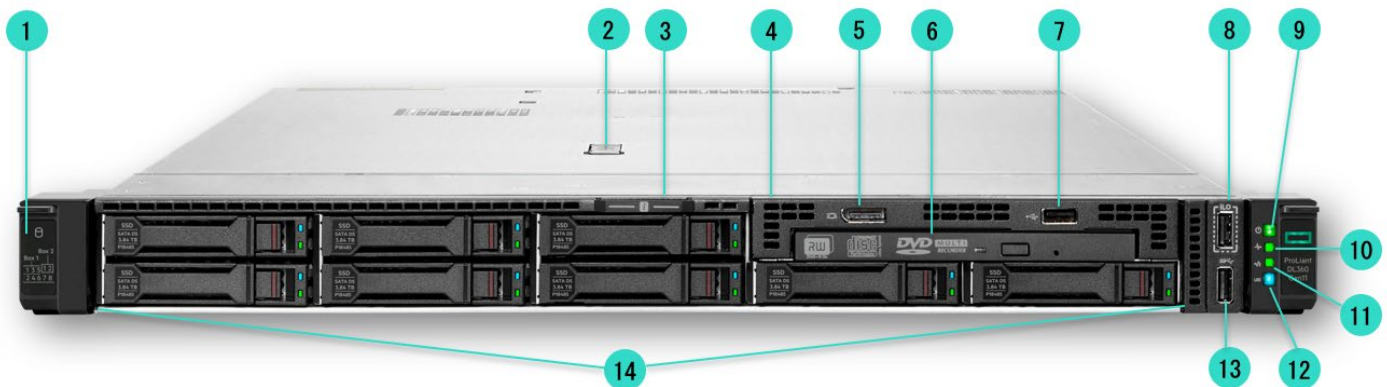


### Overview

#### HPE ProLiant DL360 Gen11

Do you need to efficiently expand or refresh your IT infrastructure to propel the business? Adaptable for diverse workloads and environments, the compact 1U HPE ProLiant DL360 Gen11 delivers enhanced performance with the right balance of expandability and density. Designed for supreme versatility and resiliency while backed by a comprehensive warranty, the HPE ProLiant DL360 Gen11 is ideal for IT infrastructure, either physical, virtual, or containerized.

The HPE ProLiant DL360 Gen11 supports the 4<sup>th</sup> Generation Intel® Xeon® Scalable Processors with up to 56 cores, plus 4800 MT/s HPE DDR5 SmartMemory up to 4.0 TB per socket. Introducing PCIe Gen5 and Intel® Software Guard Extensions (SGX) support on the dual-socket segment, the HPE ProLiant DL360 Gen11 complements Gen10 Plus reach by delivering premium compute, memory, networking communication, discrete graphic, I/O, and security capabilities for customers focused on performance at any cost. DL360 Gen11 server is an excellent choice of daily business and workloads in General Compute, Database Management, Virtual Desktop Infrastructure, Content Delivery Network, Edge Acceleration and Intelligent Video Analytics.

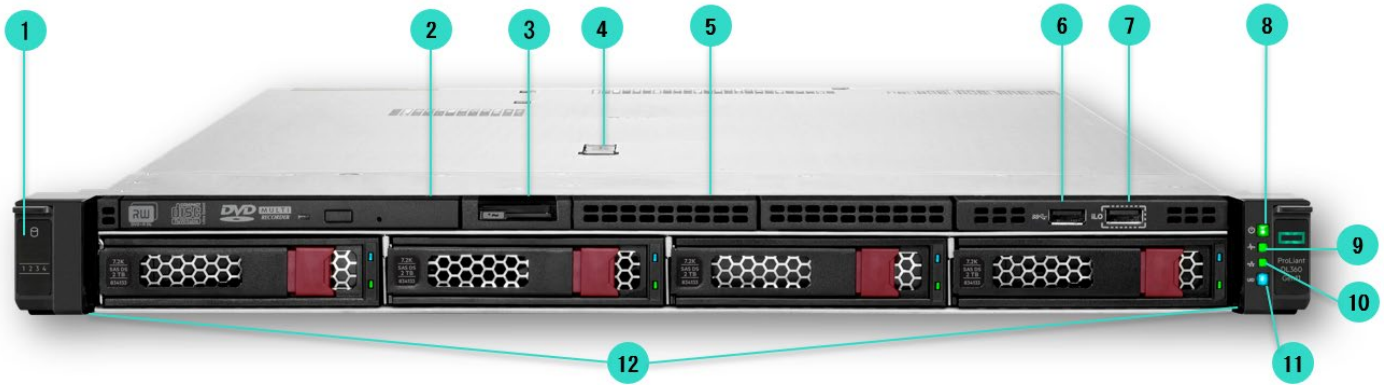


**8 SFF Front View – 8 SFF + optional Universal Media Bay, optional drive, Display Port, USB2.0 and SAS drives shown**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Drive support label</li> <li>2. Quick removal access panel</li> <li>3. Serial number/iLO information pull tab (optional - shown)</li> <li>4. Universal Media Bay (optional):             <ul style="list-style-type: none"> <li>• Option: Optical drive bay + Display port &amp; USB 2.0 port kit (shown)</li> <li>• Option: 2 SFF 24G x4 Tri-Mode SAS/SATA/U.3 NVMe cage</li> </ul> </li> <li>5. Display Port (optional – shown)</li> <li>6. Optical drive (optional – shown)</li> <li>7. USB2.0 port (optional)</li> </ol> | <ol style="list-style-type: none"> <li>8. iLO Service port</li> <li>9. Power On/Standby button and system power LED</li> <li>10. Health LED</li> <li>11. NIC status LED</li> <li>12. Unit ID button/LED</li> <li>13. USB 3.2 Gen1 port</li> <li>14. Drive bays; optional backplanes:             <ul style="list-style-type: none"> <li>• Option: 8 SFF x1 24G Tri-Mode SAS/SATA/U.3 NVMe</li> <li>• Option: 8 SFF x4 24G Tri-Mode SAS/SATA/U.3 NVMe</li> </ul> </li> </ol> |
|--|---|

**Notes:** Optional- Systems Insight Display (SID) module is available for 8SFF CTO Server, and will be installed at the left-hand side of iLO Service port and USB 3.2 Gen1 port.

## Overview



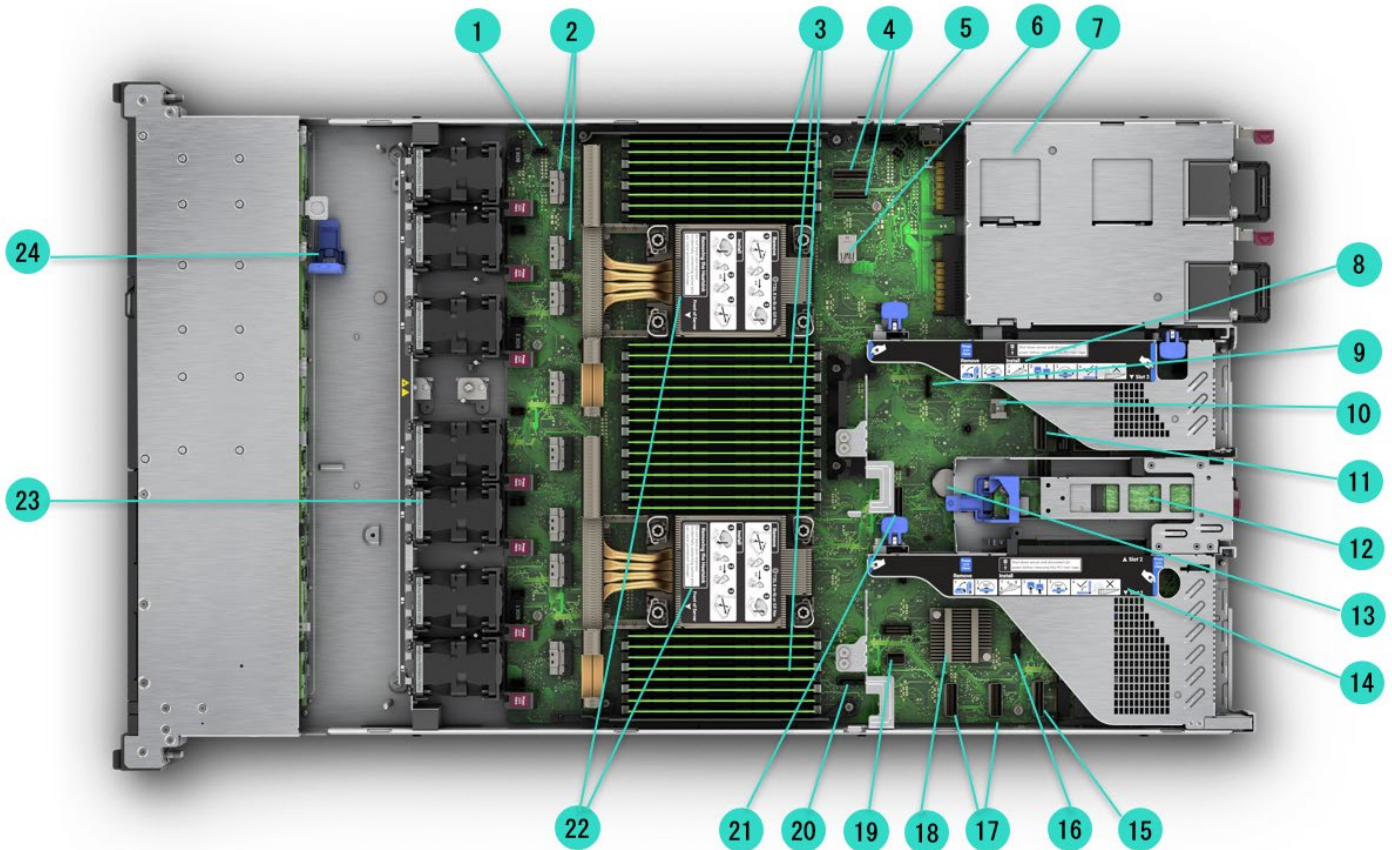
#### 4 LFF Front View – 4 LFF + optional Optical drive, Display Port, USB2.0 and SAS drives shown

- |   |   |
|---|---|
| 1. Drive support label  | 7. iLO Service Port                             |
| 2. Optical drive (optional – shown)                             | 8. Power On/Standby button and system power LED |
| 3. Serial number/iLO information pull tab                       | 9. Health LED                                   |
| 4. Quick removal access panel                                   | 10. NIC status LED                              |
| 5. Option: Display port & USB 2.0 port bundle Kit (blank shown) | 11. Unit ID button/LED                          |
| 6. USB 3.2 Gen1 port  | 12. SAS/SATA drive bays                         |

**Notes:** Systems Insight Display (SID) module is not available in 4LFF CTO Server.



Overview

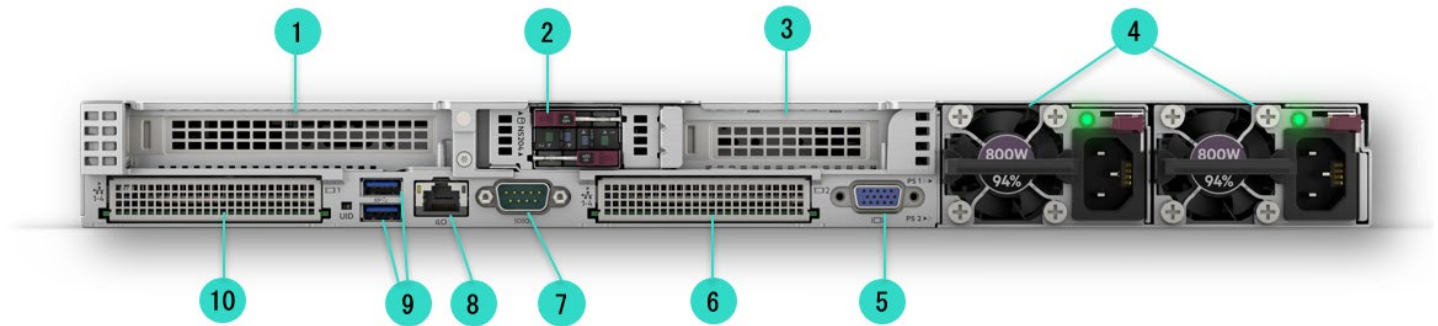


**Internal View - Standard for all DL360 Gen11**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Liquid Cooling Module connector</li> <li>2. x8 SlimSAS ports (1A to 4A, 1B to 4B)</li> <li>3. DDR5 DIMM Slots (fully populated 32 DIMMs shown)</li> <li>4. Socket 2 MCIO ports (1 &amp; 2)</li> <li>5. Backplane Power connector</li> <li>6. Internal USB port (top USB 3.2 Gen1 and bottom USB 2.0)</li> <li>7. Redundant Power Supply (1 &amp; 2 as shown)</li> <li>8. Secondary (CPU 2) Riser PCIe 5.0             <ul style="list-style-type: none"> <li>• Option: Low Profile x16</li> <li>• Option: Full height x16 (lose Slot 2 on Primary Riser)</li> </ul> </li> <li>9. SID connector (optional feature, 8SFF only)</li> <li>10. Energy Pack connector</li> <li>11. OCP Slot port</li> <li>12. HPE NS204i-u NVMe Hot Plug Boot Optimized Storage Device (optional – shown)</li> </ol> | <ol style="list-style-type: none"> <li>13. System Battery</li> <li>14. Primary (CPU1) Riser PCIe 5.0             <ul style="list-style-type: none"> <li>• 1x 16 FH and 1x16 LP slots</li> </ul> </li> <li>15. OCP Slot port</li> <li>16. Front Display Port and USB 2.0 connector (optional feature)</li> <li>17. LP SlimSAS ports (1 &amp; 2)</li> <li>18. Chipset</li> <li>19. Front I/O and USB 3.2 Gen1 connector</li> <li>20. SATA Optical port</li> <li>21. Socket 1 MCIO connector</li> <li>22. CPU 1 (bottom) and CPU 2 (top) (shown with High Performance Heatsink)</li> <li>23. Hot plug (dual rotor) High Performance Fan Kit (7 fans)             <ul style="list-style-type: none"> <li>• Option: Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit</li> </ul> </li> <li>24. HPE Hybrid Capacitor or HPE Storage Battery holder</li> </ol> |
|--|---|



## Overview



### Rear View - Standard for all DL360 Gen11

- |    |  |     |  |
|----|--|-----|--|
| 1. | Slot 1 PCIe 5.0 – Full Height                                | 6.  | OCP 3.0 Slot 2: x16 PCIe 5.0 <sup>1,2</sup> (Requires 2 <sup>nd</sup> Processor) |
| 2. | Slot 2 PCIe 5.0 – Low Profile*                               | 7.  | Serial port (optional - shown)   |
| 3. | Option: Slot 3 PCIe 5.0 (Requires 2 <sup>nd</sup> processor) | 8.  | iLO Management Port  |
|    | • Low Profile and Full Height options                        | 9.  | USB 3.2 Gen1 Ports   |
| 4. | Redundant Power Supply (1 & 2 as shown)                      | 10. | OCP 3.0 Slot 1: x16 PCIe 5.0 <sup>2</sup>  |
| 5. | Video (VGA) port   |     |  |

#### Notes:

- <sup>1</sup>Supports various NICs, up to 200GbE
- <sup>2</sup>Or supports each slot with x8 PCIe 5.0 under one processor, with the selection of “P51911-B21, CPU1 to the “OCP2 x8 Enablement Kit”.

## What's New

- All new DL360 Gen11 server
- New 4th Generation Intel® Xeon® Scalable Processors
- New PCIe 5.0 support
- New HPE DDR5 SmartMemory – Registered (RDIMM), 4800MT/s
- New HPE Gen11 Storage Controllers
- New HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device
- New HPE Storage SSD and HDD support
- New HPE iLO6 support
- Nvidia A2 GPU support<sup>1</sup>
- New Intel® Virtual RAID on CPU (Intel® VROC) Premium & Standard FIO Software for HPE

**Notes:** <sup>1</sup>GPGPU can be configured, priced, and quoted. However, this server/GPGPU combination is not orderable until Q2 2023.

## Platform Information

### Form Factor

- 1U rack



## Overview

### Chassis Types

- 8 SFF drive bays: x1 24G SAS/SATA/U.3 NVMe or x4 24G SAS/SATA/U.3 NVMe
  - With options for additional 2 SFF drive bays: x4 24G SAS/SATA/U.3 NVMe
  - With options for additional optical drive, 1x USB3.2 Gen1 and 1x Display Port
- 4 LFF drive bays: x1 12G SAS/SATA
  - With additional options for optical drive, 1x USB3.2 Gen1, and 1x Display Port

### System Fans

- Choice of Standard Fan Kit (to be orderable in Q2 2023), Performance Fan Kits and Closed-loop Liquid Cooling Heatsink Fan FIO Bundle Kit

### Notes:

- Dual rotor hot plug Standard Fan kit (includes 5 fans) for processors below 185W TDP, to be orderable in Q2 2023.
  - Dual rotor hot plug High Performance Fan Kit available (includes 7 fans), for one or two processors from 186W to 270W TDP
  - The DL360 Gen11 will support up to 7 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
  - Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit supports two processors go beyond 271W TDP
- 



## Standard Features

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

- The 2<sup>nd</sup> digit of the processor model number “x4xx” is used to denote the processor generation (i.e. 4 = New 4<sup>th</sup> Generation Intel® Xeon® Scalable Processors)

### Notes:

- All information provided here is subject to change without notice. Intel may make changes to specifications and product descriptions at any time, without notice. Please contact your Intel representative to obtain the latest Intel product specifications and roadmaps.
- For more information regarding Intel® Xeon® Scalable Processors, please see the following <http://www.intel.com/xeon>.

## New 4<sup>th</sup> Generation Intel® Xeon® Scalable Processors numbering convention

### Workload

New 4 <sup>th</sup> Generation Intel® Xeon® Scalable Processors		
Processor Suffix	Description	Offering
H	DB and Analytics	Highest core counts. Database and Analytics usages benefit from DSA and IAA accelerators.
M	Media Transcode	Optimized around AVX frequencies to deliver better performance/watt around Media, AI, and HPC workloads.
N	Network/5G/Edge (Hight TPT/Low latency)	Designed for NFV and networking workloads, such as: L3 forwarding, 5G UPF, OVS DPDK, VPP FIB router, VPP IPsec, web server/NGINX, vEPC, vBNG, and vCMTS.
S	Storage and HCI	Optimized for Storage UMA use cases with increased UPI Bandwidth for vs Mainline SKUs.
P	Cloud - IaaS	Designed for cloud IaaS environments to deliver higher frequencies at constrained TDPs.
Q	Liquid Cooling	Liquid cooled processors with higher frequency and performance at same TDP.
U	One Socket Optimized	Optimized for targeted platforms adequately served by the cores, memory bandwidth and IO capacity. Available from a single processor configuration.
V	Cloud- SaaS	Optimized for orchestration efficiency that delivers higher core counts and VMs per rack.
Y	Speed Select <sup>1</sup>	Intel® SST-Performance Profile (PP) increases base frequency when fewer cores are enabled. Allows greater flexibility, deployment options and platform longevity.

### Notes:

- Covers the Intel public offering only.
- New Built-in Accelerators.
  - 1 to 8 socket support
  - Intel® Data Streaming Accelerator (DSA)
  - Intel® Dynamic Load Balancer (DLB)
  - Intel® Quick Assist Technology (QAT)
  - Intel® In-Memory Analytics Accelerator (IAA)
- Increased memory bandwidth with 8 channels DDR5, up to 4800 MT/s, 4.0TB maximum RAM per socket.
- Increased I/O bandwidth up to 80 PCIe 5.0 lanes per socket, and new Compute Express Link (CXL).
- Built-in AI Acceleration: Intel® Advanced Matrix Extension (AMX)
- Hardware-enhanced Security: Enhanced Intel® Software Guard Extensions (SGX) – with new cryptographic memory integrity
- Increased Multi-Socket Bandwidth with new UPI2.0 (up to 16GT/s) with maximum 4 UPI Links
- New FlexBus I/O Interface PCIe5.0 + CXL
- <sup>1</sup> The 4<sup>th</sup> Generation Intel® Xeon® Scalable Processors are featured with Intel Speed Select Technology (SST) for Infrastructure as a Service, Networking and Virtualized environments workloads. The SST includes,
  - SST- Performance Profile
  - SST- Base Frequency





## Standard Features

- o SST- Core Power
- o SST- Turo Frequency
- Default setting in ROM-Based Setp Utility (RBSU) as shown.

Intel® SST Features	RBSU Options	Granular Control over CPU Performance	Default Setting
SST- Performance Profile	Dynamic Intel® Speed Select Technology – Performance Profile	Allows the CPU to run in one of three performance profiles	CPU hardware-based. Enabled by default
SST-Base Frequency	Intel® Speed Select Technology – Base Frequency	Enables some CPU cores to run at a higher base frequency in return for other cores running at a lower base frequency	Disabled by default
SST-Core Power	Intel® Speed Select Technology – Core Power	Allows software to prioritize with cores will receive excess power after satisfying minimum requirements	Disabled by default
Intel SST Turbo Frequency	Intel® Turbo Boost Technology	Allows software-selected cores to achieve a higher max turbo frequency by reducing other cores' max turbo frequency	Enabled by default

### 4<sup>th</sup> Generation Intel® Xeon® Scalable Processor Family (Platinum)

Intel® Xeon® Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR5	SGX Enclave size
Platinum 8480+ Processor	2.0 GHz	56	105 MB	350W	4	4800 MT/s	512 GB
Platinum 8470 Processor	2.0 GHz	52	105 MB	350W	4	4800 MT/s	512 GB
Platinum 8470Q Processor	2.1 GHz	52	105 MB	350W	4	4800 MT/s	512 GB
Platinum 8470N Processor	1.7 GHz	52	105 MB	300W	3	4800 MT/s	128 GB
Platinum 8468 Processor	2.1 GHz	48	105 MB	350W	4	4800 MT/s	512 GB
Platinum 8468V Processor	2.4 GHz	48	97.5 MB	330W	3	4800 MT/s	128 GB
Platinum 8460Y <sup>1+2</sup> Processor	2.0 GHz	40	105 MB	300W	4	4800 MT/s	128 GB
Platinum 8458P Processor	2.7 GHz	44	82.5 MB	350W	3	4800 MT/s	512 GB
Platinum 8452Y <sup>1</sup> Processor	2.0 GHz	36	67.5 MB	300W	4	4800 MT/s	128GB

#### Notes:

- One or two processor(s) with TDP equal to or greater than 186W through 270W require High Performance Heatsink Kit (P48905-B21) and High Performance Fan Kit (P48908-B21)
- Two processors with TDP equal or greater than 271W require Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit (P48906-B21)
- <sup>1</sup>Supports Intel® Speed Select Performance Profile (SST-PP), even though not being a “Y” processor.
- <sup>2</sup> +: Feature Plus: Support AMX, DLB, DSA, IAA and QAT additionally
- Intel® Speed Select enabled processors: Platinum 8468V, 8460Y+, 8458P and 8452Y

### 4<sup>th</sup> Generation Intel® Xeon® Scalable Processor Family (Gold)

Intel® Xeon® Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR5	SGX Enclave size
Gold 6454S Processor	2.2 GHz	32	60 MB	270W	4	4800 MT/s	128 GB
Gold 6430 Processor	2.1 GHz	32	60 MB	270W	3	4400 MT/s	128 GB
Gold 6414U Processor <sup>1</sup>	2.0 GHz	32	60 MB	250W	N/A	4800 MT/s	128 GB

#### Notes:

- <sup>1</sup>Single socket capable, no dual socket support
- One or two processor(s) with TDP equal to or greater than 186W through 270W require High Performance Heatsink Kit (P48905-B21) and High Performance Fan Kit (P48908-B21)
- Two processors with TDP equal or greater than 271W require Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit (P48906-B21)



## Standard Features

### Chipset

Intel® C741 Chipset (Code Name: Product formerly Emmitsburg)

**Notes:** For more information regarding Intel® chipsets, please see the following URL:

<https://www.intel.com/content/www/us/en/products/chipsets/server-chipsets.html>

### System Management Chipset

HPE iLO 6 ASIC

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

## Memory

Type	HPE DDR5 SmartMemory	Registered (RDIMM)
DIMM Slots Available	32	16 DIMM slots per processor, 8 channels per processor, 2 DIMMs per channel
Maximum capacity (RDIMM)	8.0 TB	32 x 256 GB RDIMM @ 4800 MT/s

### Notes:

- All processors support up to 4TB memory per socket.
- The maximum memory speed is limited by the processor selection.
- To realize the performance memory capabilities listed in this document, HPE DDR5 SmartMemory is required.
- For additional information, please visit the [HPE Memory QuickSpecs and Technical White Papers or HPE DDR5 SmartMemory QuickSpecs](#).

## 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](#).

## PCIe Expansion Slots

### Primary Riser (default in chassis)

Expansion Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor
1	PCIe 5.0	x16	x16	CPU 1	Full-height, half-length, up to 9.5" length
2	PCIe 5.0	x16	x16	CPU 1	Half-height (Low-profile), up to 9.5" length

**Notes:** The specifications above correspond with the default primary butterfly riser, which comes with CTO chassis

### Secondary Riser\*

Expansion Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor (two options)
3	PCIe 5.0	x16	x16	CPU 2	-Half-height (Low-profile), up to 9.5" or -Full-height, half-length, up to 9.5" length

### Notes:

- If Secondary riser is selected, then 2 Processor must be selected.
- If secondary FH riser is installed, then primary PCIe Slot #2 cannot be used, maximum 2 quantity of PCIe cards can be selected.





## Standard Features

- If secondary FH riser is not selected, then maximum 1 quantity of FH PCIe cards can be selected.
- If secondary riser is not selected and "NS204i-u Rear Cbl Kit" is not selected, then maximum 2 quantity of PCIe cards can be selected.
- If secondary riser is not selected and "NS204i-u Rear Cbl Kit" is selected, then maximum 1 quantity of PCIe cards can be selected.
- If Secondary LP riser and "NS204i-u Rear Cbl Kit" are selected, then maximum 2 quantity of PCIe cards can be selected.
- If Secondary LP riser is selected and "NS204i-u Rear Cbl Kit" is not selected, then maximum 3 quantity of PCIe cards can be selected.
- All PCIe Slots support Wake-on-Lane (WoL) feature.

## OCP Expansion Slots

OCP3.0 Slot Priority Support Matrix						
Rear wall		Selected OCP cards (Qty & type)				
OCP Slots #	Share NIC Feature	2	1	1	1	2
		1xOROC <sup>1</sup> + 1x NIC <sup>2</sup>	1xNIC	2xNICs	1xOROC	2x OROCs
1	N/A	OROC	(Secondary)	NIC	OROC (Primary)	OROC <sup>4</sup> (Primary)
2	Available (Incl. Wake-on-Lane)	NIC	NIC (Primary)	NIC (Primary)	N/A <sup>3</sup>	OROC <sup>4</sup>

### Notes:

- <sup>1</sup> OCP form factor internal controller.
- <sup>2</sup> OCP Networking card.
- <sup>3</sup> If only 1 OROC card is selected, by default connected from 8SFF backplane to OCP Slot1. And there is no controller cable can connect from 8SFF Backplane to OCP Slot 2.
- <sup>4</sup> If 2 OROC cards are selected, by default the 8SFF controller cable is connected to OCP Slot1 (the comparably higher-end OROC card to be selected by default) and the 2SFF backplane is connected to OCP Slot2 with another OROC card selected (comparably less high-end one) with 2FF controller cable.

## Internal Storage Devices

- **Optical Drive**  
Available on 8 SFF and 4 LFF CTO Servers as an option (DVD-ROM or DVD-RW)
- **Hard Drives**  
None ship standard

## Storage Controllers

### NVMe Boot Devices

- HPE NS204i-u NVMe Hot Plug Boot Optimized Storage Device (P48183-B21)<sup>1</sup>
- HPE ProLiant DL360 Gen11 NS204i-u Rear Cable Kit (P54702-B21)
- HPE ProLiant DL360 Gen11 NS204i-u Internal Cable Kit (P48920-B21)

DL360 Gen11 NS204i-u Enablement Kit Support Matrix				
Enablement Kit	Description	Field Inst.	NS204i-u Location	Hot-plug Capability
P54702-B21	HPE ProLiant DL360 Gen11 NS204i-u Rear Cable Kit	Yes	PCIe Slot 2 <sup>2</sup>	Yes
P48920-B21	HPE ProLiant DL360 Gen11 NS204i-u Internal Cable Kit	Yes	Internal	N/A

### Notes:

- <sup>1</sup> x4 PCIe Gen3.0 OS Boot device includes 2x 480GB M.2 NVMe SSDs, with preconfigured hardware RAID1.
- <sup>2</sup> With removing the original PCIe Slot 2 cage and re-install the dedicated DL360 Gen11 NS204i-u cage, latch and cables in the P54702-B21. The NS204i-u will take up PCIe Slot 2 space only. The PCIe Slot 1 (FHHL) and PCIe Slot 3 (to be Low



## Standard Features

Profile) are available in the system with the selection of optional “HPE ProLiant DL360 Gen11 x16 LP Riser Kit (P48903-B21)”.

- For additional information, please see the [HPE OS Boot Device QuickSpecs](#)

### Software RAID

- Intel® Virtual RAID on CPU (Intel® VROC) Premium FIO Software for HPE
- Intel® Virtual RAID on CPU (Intel® VROC) Standard Software FIO for HPE

**Notes:** In HPE ProLiant Gen11 servers, when secure boot is enabled, Intel® Virtual RAID on CPU (Intel® VROC) 8.0 Out-of-Band (OOB) management does not function with Linux kernel version 5.4 (or later). Intel® VROC OOB will not respond to any PLDM (over-MCTP-over-PCIe) requests from iLO (BMC). Intel® VROC Redfish resources will not function (e.g., Redfish actions); therefore, Intel® VROC over Redfish management is not available. This is due to a new security feature in Linux kernel version 5.4 (or later).

For more information, pls visit [Customer Advisory Document ID: a00128934en\\_us](#), at HPE Support Center.

### Essential RAID Controllers

- HPE Smart Array E208e-p SR Gen10 Controller

### Performance RAID Controllers

- 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 SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller<sup>1,2</sup>

### Notes:

- PE80xx NVMe drives are not supported.
- <sup>1</sup>Requires x16 physical and electrical riser slot.
- <sup>2</sup>If second controller is required, must select secondary FH riserFor additional details, please see:

[HPE Compute MR Gen11 Controllers QuickSpecs](#)

[HPE Compute SR Gen11 Controllers QuickSpecs](#)

## Maximum Storage

Storage	Capacity	Configuration
Hot Plug SFF SAS HDD	24.0 TB	8+2 x 2.4 TB (with optional 2 SFF cage on UMB)
Hot Plug SFF SATA HDD	20.0 TB	8+2 x 2.0 TB (with optional 2 SFF cage on UMB)
Hot Plug SFF SAS SSD	15.3 TB	8+2 x 15.36 TB (with optional 2 SFF cage on UMB)
Hot Plug SFF SATA SSD	76.8 TB	8+2 x 7.68 TB (with optional 2 SFF cage on UMB)
Hot Plug SFF U.3 NVMe PCIe SSD	153.6 TB	8+2 x 15.36 TB (with optional 2 SFF cage on UMB)
Hot Plug LFF SAS HDD	80.0 TB	4 x 20 TB
Hot Plug LFF SATA HDD	80.0 TB	4 x 20 TB
Hot Plug LFF SAS SSD	30.72 TB	4 x 7.68 TB
Hot Plug LFF SATA SSD	3.84 TB	4 x 960 GB
NVMe M.2 SSD	960 GB	2 x 480 GB (shipped with optional PE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device )



## Standard Features

### Graphics

#### Integrated video standard

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

#### HPE iLO 6 on system management memory

- 32 MB Flash
- 8 Gbit DDR4 with ECC protection

### Power Supply

- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit  
**Notes:** Available in 94% and 96% efficiency.
- HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit  
**Notes:** Available in 96% efficiency.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit  
**Notes:**
  - Available in 94% efficiency.
  - 1600W Power supplies only support high line voltage (200 VAC to 240 VAC).

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 Gen11 Performance 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 visit the HPE Power Advisor located at: [HPE Power Advisor](#)

For information on power specifications and technical content visit [HPE Server power supplies](#).

### Interfaces

<b>Serial</b>	1 port - Optional
<b>Video</b>	1 Front - Display port (optional) 1 Rear - VGA port (standard on all models) <b>Notes:</b> Both ports are not active simultaneously.
<b>Network Ports</b>	None. Choice of OCP or stand up card, supporting a wide arrange of NIC adapters. BTO models will come pre-selected with a primary networking card.
<b>HPE iLO Remote Mgmt Port at rear</b>	1 GbE Dedicated
<b>Front iLO Service Port</b>	1 standard
<b>MicroSD Slot</b>	Optional via HPE 32GB microSD RAID1 USB Boot Device <b>Notes:</b> MicroSD cards are not hot-pluggable, server must be powered down before removal.
<b>USB</b>	5 standard on all models: 1 front, 2 rear, 2 internal +1 optional at the front <ul style="list-style-type: none"> <li>• Front: 1 USB 3.2 Gen1 + iLO service port</li> <li>• Rear: 2 USB 3.2 Gen1</li> <li>• Internal: 1 USB 3.2 Gen1 + 1 USB 2.0</li> <li>• Optional: 1 Front USB 2.0</li> </ul>
<b>Systems Insight Display (SID)</b>	Optional for 8SFF CTO Server model



## Standard Features

### Operating Systems and Virtualization Software

#### See [HPE Servers Support & Certification Matrices](#)

- [Microsoft Windows Server](#)
- [VMware ESXi](#)
- [Red Hat Enterprise Linux \(RHEL\)](#)
- [SUSE Linux Enterprise Server \(SLES\)](#)
- [Canonical Ubuntu](#)
- [Oracle Linux and Oracle VM](#)
- [Citrix](#)

#### Notes:

- For Windows Server and Microsoft Hyper-V Server, will be certified when shipment is available
- RHEL, SLES, Oracle Linux and Ubuntu will be certified at a later timeframe.

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### Industry Standard Compliance

- ACPI 6.4 Compliant
- PCIe 5.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- VGA
- Display Port
- **Notes:** This support is on the optional Universal Media Bay.
- USB 3.2 Gen1 Compliant
- USB 2.0 Compliant (only on optional Universal Media Bay and embedded internal USB)
- Energy Star
- SMBIOS 3.4
- Redfish API
- IPMI 2.0
- Secure Digital 4.0
- Embedded TPM 2.0 support
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4

#### Notes:

- For additional technical, thermal details regarding ambient temperature, humidity, and feature support, please visit <http://www.hpe.com/servers/ashrae>
- At Standard Operating Support conditions, there is no time limitation for operating the servers in ASHRAE Class A2 conditions, unless otherwise specified in the applicable product information.
- EU Lot9
- **Notes:** European Union (EU) eco-design regulations for server and storage products, known as Lot 9, 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.  
Please visit: <https://www.hpe.com/us/en/about/environment/msds-specs-more.html> for more information regarding HPE Lot 9 conformance.



## Standard Features

- UEFI (Unified Extensible Firmware Interface Forum) 2.7  
**Notes:** UEFI is the default for the DL360 Gen11.

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### 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 2 implementation to support UEFI Mode.

**Notes:** The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hpe.com/servers/uefi>.

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

- Secure Boot and Secure Start enable for enhanced security
- Embedded UEFI Shell
- Operating system specific functionality
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- Support for > 2.2 TB (using GPT) boot drives
- PXE boot support for IPv6 networks
- USB 3.0 Stack
- Workload Profiles for simple performance optimization

### UEFI Boot Mode only

- TPM 2.0 Support
- iSCSI Software Initiator Support.
- NVMe Boot Support
- HTTP/HTTPs Boot support as a PXE alternative.
- Platform Trust Technology (PTT) can be enabled.
- Boot support for option cards that only support a UEFI option ROM

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

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## 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.

For more information visit the HPE GreenLake Ops Management QuickSpecs:

<https://www.hpe.com/psnow/doc/a50004263enw>

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## Standard Features

### 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).

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

#### Intelligent Provisioning

Hassle free server and OS provisioning for one or more servers with Intelligent Provisioning.

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

#### iLO RESTful API

iLO RESTful API is DMTF Redfish API information 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>.

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### 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 Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations, to learn more visit: <http://www.hpe.com/servers/ahsv>.

#### Smart Update

Keep your servers up to date with the HPE Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP).

Learn more at <https://www.hpe.com/us/en/servers/smart-update.html>.

#### iLO Amplifier Pack

Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9, Gen10 and Gen10 Plus HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities.

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

#### HPE iLO Mobile Application

Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <http://www.hpe.com/info/ilo/mobileapp>.

#### RESTful Interface Tool

RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. 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>.





## Standard Features

### HPE OneView Standard

HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE server generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. Learn more at <http://www.hpe.com/info/oneview>.

### HPE Systems Insight Manager (HPE SIM)

Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. Also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. Learn more at <http://www.hpe.com/info/hpesim>.

## Security

- UEFI Secure Boot and Secure Start support
- Immutable Silicon Root of Trust
- FIPS 140-2 validation
- Common Criteria certification
- Configurable for PCI DSS compliance
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Support for Commercial National Security Algorithms (CNSA)
- iLO Security Modes
- Granular control over iLO interfaces
- Smart card (PIV/CAC) and Kerberos based 2-factor Authentication
- 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 2.0 (Trusted Platform Module 2.0)
- Bezel Locking Kit option
- Chassis Intrusion detection option

## HPE Trusted Platform Module

HPE Trusted Platform Module 2.0 is included on Pre-Configured models and can be enabled and disabled using the BIOS.

**Notes:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates, and encryption keys.

## Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext operational services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**Notes:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<https://www.hpe.com/us/en/search-results.html?page=1&q=servers%20warranty&autocomplete=0>



## Optional Features

### 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 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 Insight Cluster Management Utility (CMU)

HPE Insight Cluster Management Utility is a HyperScale management framework that includes software for the centralized provisioning, management and monitoring of nodes and infrastructure. Learn more at <http://www.hpe.com/info/cmu>.

#### Accelerator and GPGPU Information

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

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### Rack and Power Infrastructure

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

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

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

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

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

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

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## Optional Features

### One Config Simple (SCE)

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

<https://h22174.www2.hpe.com/SimplifiedConfig/Welcome#>

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## Service and Support

### HPE Pointnext - Service and Support

**Get the most from your HPE Products.** Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services** focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

### Consume IT on your terms

**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** provides 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.

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## Recommended Services

### 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 reimaged 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/completercare>

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## Service and Support

### Other related Services

#### HPE Server Hardware Installation

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

<https://h20195.www2.hp.com/v2/Getdocument.aspx?docname=5981-9356enw>

#### HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures. Installation and start up services also include the installation of one supported operating system type (Windows® or Linux).

#### DC for Hyperscale

Complete Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high-volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model.

#### HPE Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration, and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped, and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration, and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers as well as the MSAxxx3PAR suite, XP, rackable tape libraries and configurable network switches.

#### HPE Service Credits

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

#### HPE Education Services

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

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#### HPE Support Center

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

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

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

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

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



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## Service and Support

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

**Notes:** HPE ProLiant DL360 Gen11 Server is covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fiber switches, InfiniBand, and UPS batteries over 12KVA. See the specific high value options that require additional support [here](#).

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### Parts and Materials

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

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

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

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## Configuration Information

### Smart Templates from HPE

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

### Workload Solutions Templates from HPE

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

### Mainstream SKUs

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

### Mainstream Configurations

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

This section lists some of the steps required to configure a Factory Integrated Model.

To ensure 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.
- 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 models do not include embedded LOM. To enable networking capability please select a validated alternative NIC - OCP or PCIe- from the Core Options section.

CTO Server	HPE DL360 Gen11 4LFF NC CTO Server	HPE DL360 Gen11 8SFF NC CTO Server
<b>SKU Number</b>	P52498-B21	P52499-B21
<b>TAA SKU*</b>	P52498-B21#GTA	P52499-B21#GTA
<b>HPE Trusted Supply Chain</b>	Optional: P36394-B21	
<b>Processor</b>	Not included as standard	
<b>DIMM Slots</b>	32-DIMM slots	
<b>DIMM Blanks</b>	DIMM Blanks are required, embedded and shipped as default in all CTO Servers	
<b>Storage Controller</b>	Choice of HPE ProLiant Gen11 MR and SR PCIe and OCP plug-in Controller and Intel® VROC Software RAID capable.	
<b>PCIe Slots</b>	PCIe 5.0. One standard primary/butterfly riser: 2 slots as Slot 1 & Slot 2 (1 x16 FH / 1 x16 LP) and 4 x8 front NVMe connectors Optional: Slot 3 in 1 x16 FH or LP slot	
<b>OCP3.0 Slots</b>	PCIe 5.0: 2 slots (1x16/ 1x16)	



## Configuration Information

CTO Server	HPE DL360 Gen11 4LFF NC CTO Server	HPE DL360 Gen11 8SFF NC CTO Server
<b>Drive Cage – included</b>	4 LFF – default backplane x1 12G SAS/SATA Low Profile (LP) carrier support	8SFF – Optional backplanes in choice of: x1 TriMode 24G SAS/SATA/U.3 NVMe or x4 TriMode 24G SAS/SATA/U.3 NVMe, must be selected if internal drives needed Basic carrier (BC) drive support
<b>Network Controller</b>	<p>"BCM 5719 1Gb 4p BASE-T OCP Adptr" to be defaulted in the configurator at OCP Slot 2<sup>1</sup>. Customer is allowed to remove and select other cards (PCIe or OCP) from Networking OR InfiniBand OR Smart IO (HW) OR Storage Offload category.</p> <p>Choice of OCP3.0 or stand-up cards for primary networking selection plus additional/optional stand-up networking adapters.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– No embedded networking from motherboard.</li> <li>– <sup>1</sup> In 1 Processor configuration, "CPU1 to OCP2 x8 Enablement Kit" will be selected as default as OCP NIC is pre-selected at OCP Slot 2, to be defaulted in the configurator if 1 Processor is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU1 to OCP2 x8 Enablement Kit" will be removed.</li> <li>– <sup>1</sup> "CPU2 to OCP2 x8 Enablement Kit" or "CPU2 to OCP2 x16 Enablement Kit" must be selected if OCP NIC is selected in 2 Processors configuration. "CPU2 to OCP2 x8 Enablement Kit" to be defaulted in the configurator if 2 Processors are selected. User should be allowed to remove "CPU2 to OCP2 x8 Enablement Kit" and should be forced select "CPU2 to OCP2 x16 Enablement Kit" if OCP NIC is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU2 to OCP2 x8 Enablement Kit" will be removed.</li> </ul>	
<b>Fans</b>	<p>Choice of</p> <ul style="list-style-type: none"> <li>• 5 Standard Fans for one processor below 185W TDP (shipment available in Q2 2023)</li> <li>• Additional 2 Standard Fans for 2nd Processor,</li> <li>• High Performance Fan Kits and</li> <li>• Closed-loop Liquid Cooling Heat Sink Fan Bundle FIO Kit</li> </ul> <p><b>Notes:</b> If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then any Fans (Standard Fan Kit or High Performane Fan Kit) cannot be selected.</p>	
<b>Management</b>	<p>HPE iLO with Intelligent Provisioning (standard) HPE GreenLake for Compute Ops Management (a 3-year subscription included) Optional: iLO Advanced and OneView</p>	
<b>Video Output</b>	<p>Rear: 1 VGA Optional:</p> <ul style="list-style-type: none"> <li>• 1 Front Display Port (standalone in 8SFF; USB2.0+ Display Port bundle kit in 4LFF),</li> <li>• 1 Rear Serial Port</li> </ul>	
<b>USB</b>	<p>Front: 1 USB 3.2 Gen1 + iLO service port Rear: 2 USB 3.2 Gen1 Internal: 1 USB 3.2 Gen1 + 1 USB2.0 Optional: 1 Front USB 2.0</p>	
<b>Security</b>	<p>TPM2.0 (Trusted Platform Module) embedded <b>Notes:</b> Disabled on shipments to China</p>	
<b>Rail Kit</b>	<p>Optional Easy Install rails and CMA <b>Notes:</b> Server does not support shelf mounted rail kits ("L" brackets).</p>	
<b>Form Factor</b>	1U Rack	
<b>Warranty</b>	3-year parts, 3-year labor, 3-year onsite support with next business day response.	

## Configuration Information

### Notes:

- All DL360 Gen11 CTO Server models require a networking selection of a network adapters in the “HPE Networking” section.
- HPE Trusted Supply Chain (P36394-B21) is an optional security upgrade intended for agencies and regulated industries needing enhanced security and compliance needs. Applying this option to a DL360 Gen11 CTO server ensures it is built in the USA in a secured facility by vetted HPE personnel assigned to the manufacturing processes. A multitude of checkpoints/inspections for malicious microcode and counterfeit parts are performed throughout the server build, and additional safeguards are put in place against cyber-exploits throughout the server lifecycle. The HPE ProLiant DL360 Gen11 is re-branded as a HPE ProLiant DL360T Gen11 to denote the HPE Trusted Supply Chain security enhancements. The DL360T is Trade Agreement Act (TAA) compliant. See “HPE Security” section within this document for more detail and learn more at <http://www.hpe.com/security>
- \*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).
- All CTO servers are Energy Star compliant, exclude configuration with GPU Must select Processor, Memory and Power Supply in all CTO models. Backplane to be further selected in 8SFF CTO Model.
- Minimum One card (PCIe or OCP) must be selected from Networking OR InfiniBand OR Smart IO (HW) OR Storage Offload category.
- "BCM 5719 1Gb 4p BASE-T OCP Adptr" to be defaulted in the configurator. Customer is allowed to remove and select other cards (PCIe or OCP) from Networking OR InfiniBand OR Smart IO (HW) OR Storage Offload category
- If the 8SFF CTO Model is selected with Rack, then " HPE Easy Install Rail 3 Kit" (P52341-B21) must be selected.
- If the 4LFF CTO Model is selected with Rack, then " HPE Easy Install Rail 5 Kit " (P52343-B21) must be selected.
- Supported Rail kit to be defaulted for CTO Model in the configurator. But customer can deselect the Rail kit if the CTO Model is selected without Rack (Standalone server).

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## Step 2: Choose Core Options

- Mixing of 2 different processor models is not supported.
- CTO server will populate necessary heatsink and fan kits per system thermal requirements and processor models
- DIMM Blanks are pre-selected as default, minimum Q'ty 1 of memory need to be selected in 1 Processor configuration, and minimum Q'ty 2 of memory need to be selected in 2 Processor configuration
- Choice of storage controllers and OS Boot Device
- 4LFF backplane and cage are pre-selected, in 4LFF CTO Server; choice of backplanes in 8SFF CTO server.
- Choice of ODD drive and storage device
- Factory Configuration Settings
- Choice of riser card for PCIe5.0 slots enablement
- Choice of OS Boot Device
- Choice of Networking solution
- Choice of Power and Cooling solution
- Choice of Security Options
- Software as a Service Management : Choice of HPE GreenLake for Compute Ops Management and Choice of HPE OneView



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## Configuration Information

### Step 3: Choose Additional Options

- Choice of Accessories
  - Choice of GPGPU (shipment will be available in Q2 2023)
  - Choice of Embedded Management
  - Choice of Racks
  - Choice of PDUs
  - Choice of UPS
  - Choice of USB and SD Options
  - Choice of Enterprise Mainstream Flash Media Kits for Memory Cards
- 



## Core Options

### Choose Core Options

#### Processor

Please select one or two matching processors.

For example: for a single Xeon-Platinum 8470 processor configuration select 1x P49606-B21. If dual Xeon-Platinum 8470 processor configuration, select 2x P49606-B21.

#### Notes:

- Mixing of 2 different processor models is not supported.
- CTO server will populate necessary fan kits per system thermal requirements and processor models, minimum as 5 standard fans. Dual processor configurations require 7 fans, either standard or high performance.
- Processors with Wattage equal to or greater than 186W require High Performance Heatsink (P48905-B21).
- Processors with Wattage equal to or greater than 186W require High Performance Fan Kit (P48908-B21).
- If Processor Wattage is more than 271W, then Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If 8470Q Processor is selected, then SAS drive/ NVMe drive cannot be selected in the server. Only 8xSATA HDD can be selected.

#### 4<sup>th</sup> Generation Intel Xeon-Platinum

**Notes:** All SKUs below ship with processor only. Adequate fans and heatsinks must be selected.

Intel Xeon-Platinum 8480+ 2.0GHz 56-core 350W Processor for HPE P49607-B21

#### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8470 2.0GHz 52-core 350W Processor for HPE P49606-B21

#### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21)
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8470Q 2.1GHz 52-core 350W Processor for HPE P49609-B21

#### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If 8470Q Processor is selected, then SAS drive/ NVMe drive cannot be selected in the server. Only 8xSATA drive can be selected.
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8470N 1.7GHz 52-core 300W Processor for HPE P49649-B21

#### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8468 2.1GHz 48-core 350W Processor for HPE P49605-B21

#### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.



## Core Options

Intel Xeon-Platinum 8468V 2.4GHz 48-core 330W Processor for HPE P49631-B21

### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8460Y+ 2.0GHz 40-core 300W Processor for HPE P49604-B21

### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21)
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8458P 2.7GHz 44-core 350W Processor for HPE P49632-B21

### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

Intel Xeon-Platinum 8452Y 2.0GHz 36-core 300W Processor for HPE P49616-B21

### Notes:

- Requires Closed-loop LC Heat Sink Fan Bundle FIO Kit must be selected (P48906-B21).
- If the Graphics (GPU) Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected with 25C ambient temperature.

## 4<sup>th</sup> Generation Intel Xeon-Gold

**Notes:** All SKUs below ship with processor only. Adequate fans and heatsinks must be selected.

Intel Xeon-Gold 6454S 2.2GHz 32-core 270W Processor for HPE P49654-B21

**Notes:** Requires High Performance Heatsink (P48905-B21) and High Performance Fan Kit (P48908-B21).

Intel Xeon-Gold 6430 2.1GHz 32-core 270W Processor for HPE P49614-B21

**Notes:** Requires High Performance Heatsink (P48905-B21) and High Performance Fan Kit (P48908-B21)..

Intel Xeon-Gold 6414U 2.0GHz 32-core 250W Processor for HPE P49619-B21

### Notes:

- Max 1.
- Requires High Performance Heatsink (P48905-B21) and High Performance Fan Kit (P48908-B21).

## Heatsinks

For more details, please refer to the support matrix in Power and Cooling solutions (Additional Option section)

HPE ProLiant DL3XX Gen11 High Performance Heat Sink Kit P48905-B21

### Notes:

- If Processor Wattage is more than 185W and less than or equal to 270W, then "Performance Heatsink" and "Performance Fan" must be selected.
- Quantity of Processor and Quantity of Heatsink must match.
- If Liquid Cooling HeatSink is selected, then "High Perf Heat Sink" cannot be selected.

HPE ProLiant DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit P48906-B21

### Notes:

- Maximum quantity for LC Heat Sink is one per system.
- If Processor Wattage is more than 185W and less than or equal to 270W, then "Performance Heatsink" and "Performance Fan" must be selected.
- If Processor Wattage is more than 270W, then LC Heat Sink Kit must be selected. This applies to all processor SKUs for DL360 Gen11 including High Bandwidth Memory (HBM) processors.





## Core Options

- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then a 2P configuration must be selected.
- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then any Fans (Standard Fan Kit or High Performance Fan Kit) cannot be selected.
- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then “Standard heat Sink” or “High Perf Heat Sink” cannot be selected.
- The HPE DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle kit is designed as Factory Installation only & is not designated as a Customer Self-Repair (CSR) part to prevent damage to CPUs when customer is conducting the field upgrade on the Liquid Cooling modular itself or CPUs.
- The HPE DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle kit contains (2) cold plates (1 per CPU) each with a pump, Tubes, (7) 4028 fans and a radiator. The LC Heat Sink option is designed to cool down the processor effectively using cooled inlet air.
- The water-cooling liquid is not corrosive for human body, but to avoid the risk of connection or damages in a longer term, it is recommended to wash hands after contact. There is no leak detection capability, yet the pumps inside of the system are redundant. If a pump or any of the components inside the solution fail, the CPU temperature or internal server temperature may increase leading to a iLO alert message.
- The HPE DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle kit is offered with Standard (3/3/3) Warranty support along with the server. Customers are able to purchase extended support for years (4) and (5).
- This Cooling Solution is subject to a maximum usage (operational) limitation not to exceed (5) years and required to be replaced when this time limit has been reached. HPE recommends replacing the Closed-loop Liquid Cooling solution when it has reached the maximum (5) years of use. Parts and components that Hewlett Packard Enterprise determines have surpassed the standard (3) years warranty\* will not be provided, repaired, or replaced under warranty coverage. Contact your local HPE sales representative for additional information.
- \* Or to the extended (4) or (5) years if warranty contract purchased, and subject to the maximum usage (operation) limitation of (5) years.

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## Memory

Please select one or more memory DIMMs from below.

For new Gen11 memory population rule whitepaper and optimal memory performance guidelines, please go to:

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

Server memory population rules for HPE Gen11 servers with 4<sup>th</sup> Gen Intel Xeon Scalable processors

For more information, please see the [HPE DDR5 SmartMemory QuickSpecs](#)

### Notes:

- The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.
- Quantity of memory DIMMs selected per socket must be 1, 2, 4, 6, 8, 12 or 16.
- x8 and x4 cannot be mixed.
- 3DS and non-3DS Memory cannot be mixed.
- Mixing of different Rank Memory is not allowed if less than 16 quantity of Memory is selected for 1 Processor configuration.
- Mixing of different Rank Memory is not allowed if less than 32 quantity of Memory is selected for 2 Processor configuration.
- If different Rank Memory are mixed, then quantity of each Memory part number must be same.
- If 256GB Memory is selected, will be limited to 1P1D, thus Maximum of 8 can be selected per Processor.
- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP), that is 100G or more, cannot be selected.
- Long boot time may be introduced because of DDR5 initialization takes much longer than last generation DDR4, as an industry impact. HPE ProLiant server boot times will go through multiple reboots during POST for default restore.
- If 256GB Memory is selected, will be limited using 7x performance fan or CLC fan (not allow standard fan), and limit at 25C.



## Core Options

### Registered DIMMs DDR5 (RDIMMs)

HPE 16GB 1Rx8 PC5-4800B-R Smart Kit	P43322-B21
HPE 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P43328-B21
HPE 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart Memory Kit	P43331-B21
HPE 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-46-39-39 EC8 Registered 3DS Smart Memory Kit	P43334-B21
HPE 256GB 8RX4 PC5-4800B-R 3DS Smart Kit	P43377-B21

### HPE DIMM blanks

HPE DDR4 DIMM Blank Kit	P07818-B21
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**Notes:** Required, embedded and shipped as default in all CTO Servers. Leverage the same fro, DL360 Gen10 Plus DIMM Blank.

## Storage Devices

### Hardware Storage Controller

HPE SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller	P47184-B21
HPE MR416i-p Gen11 x16 Lanes 8GB Cache PCI SPDM Plug-in Storage Controller	P47777-B21
HPE MR416i-o Gen11 x16 Lanes 8GB Cache OCP SPDM Storage Controller	P47781-B21
HPE MR216i-p Gen11 x16 Lanes without Cache PCI SPDM Plug-in Storage Controller	P47785-B21
HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller	P47789-B21
HPE MR408i-o Gen11 x8 Lanes 4GB Cache OCP SPDM Storage Controller	P58335-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

### Notes:

- Max 1 of PCIe internal controller can be selected per server.
- Max 2 of PCIe and OROC internal controller can be selected per server.
- If any of this controller is selected, then "HPE 96W Smart Stg Li-ion Batt 145mm Kit" or "HPE Smart Hybrid Capacitor w/ 145mm Cbl" must be selected. Vice versa.
- Internal MR-series and Internal SR-series controller cannot be selected together. Below message to be displayed in configurator: "MegaRAID Tools cannot be used to script and configure SmartRAID (formerly known as SmartArray) controllers used on HPE Gen9/10/10 Plus/11 servers".
- Below warning message to be displayed in the configurator if SR external (E208e) is selected with MR Internal (MR216i/MR416i/MR408i) controllers in the configuration: "Notice: When selecting SR RAID controllers for external storage and MR RAID controllers for internal storage please be aware these two products use different RAID configuration tools. Therefore, there will be a RAID configuration tool for the SR external controller and another for the MR internal controller."
- For 8SFF CTO Model: If MR408i-o is the only controller selected, then 8SFF cable kit cannot be selected for 8SFF x4 drive cages.
- Except MR408i-o, all internal controllers are supported with 8SFF CTO Model only.
- If both 4P Networking (Base-T and Full-Height) and Half-Height Internal PCIe controller (MR416i-p and MR216i-p) are selected, then Secondary FH riser cannot be selected.
- For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR416i-p/ MR216i-p and MR416i-o/ MR216i-o/ MR408i-o are selected, then both "HPE DL360 Gen11 8SFF PCIe Cbl Ki/ P48909-B21 or HPE DL360 Gen11 OROC TM Cbl Kit/ P52416-B21" and "HPE DL360 Gen11 2SFF TM Cbl Kit/ P48910-B21" must be selected.
- For additional details, pls visit:  
[HPE Compute MR Gen11 Controllers Quick Spec](#)  
[HPE Compute SR Gen11 Controllers Quick Spec](#)



## Core Options

### Storage Battery

HPE 96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	P01366-B21
HPE Smart Storage Hybrid Capacitor with 145mm Cable Kit	P02377-B21
HPE ProLiant DL360 Gen11 Storage Controller Enablement Cable Kit	P48918-B21

#### Notes:

- If "HPE 96W Smart Stg Li-ion Batt 145mm Kit" or "HPE Smart Hybrid Capacitor w/ 145mm Cbl" is selected, then "HPE DL360 Gen11 Stg Cntrl Enable Cbl Kit" must be selected. Vice versa.
- Max 1 of Storage Battery can be selected per server.

### Internal Storage Controller Cables

HPE ProLiant DL360 Gen11 8SFF PCIe Controller Cable Kit	P48909-B21
HPE ProLiant DL360 Gen11 2SFF Tri-Mode Controller Cable Kit	P48910-B21
HPE ProLiant DL360 Gen11 LFF Internal Cable Kit	P48913-B21
HPE ProLiant DL360 Gen11 OROC Tri-Mode Cable Kit	P52416-B21

#### Notes:

- Max 1 of 8SFF cable can be selected per server.
- Max 1 of 2SFF cable can be selected per server.
- Max 1 LFF cable can be selected for 4LFF CTO Model.
- If 8SFF PCIe cable is selected, then any one of 8SFF Drive cage and PCIe form factor internal controller must be selected.
- If 8SFF OROC cable is selected, then any one of 8SFF Drive cage and OCP form factor controller (OROC) must be selected.
- If 2SFF TM cable is selected, then any one of 2SFF Drive cage and any controller (PCIe or OCP form factor) must be selected.
- If 4LFF cable is selected, then MR408i-o must be selected.
- For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR416i-p/ MR216i-p and MR416i-o/ MR216i-o/ MR408i-o are selected, then both "HPE DL360 Gen11 8SFF PCIe Cbl Ki/ P48909-B21 or HPE DL360 Gen11 OROC TM Cbl Kit/ P52416-B21" and "HPE DL360 Gen11 2SFF TM Cbl Kit/ P48910-B21" must be selected.

### RAID Settings

HPE RAID 0 Drive 1 FIO Setting	339777-B21
HPE RAID 1 Drive 1 FIO Setting	339778-B21
HPE RAID 5 Drive 1 FIO Setting	339779-B21
HPE Raid 5 w/SP Drive 1 FIO Setting	339780-B21
HPE RAID FIO Advanced Data Guarding Option	339781-B21
HPE Customer Defined RAID Setting Service	389692-B21

#### Notes:

- General RAID rules:
- Only a single set of RAID will be offered and will only be applied to all applicable drives installed in a server.
- RAID requires selection of a Smart Array controller and a specific number of matching drives. (i.e same part number)
- If RAID is selected, and only SAS OR SATA OR NVMe drives are configured, then all drives must be the same part number. (i.e., matching drives)
- If RAID is selected and both SAS AND SATA drives are configured, then only the SAS drives will be used in the RAID set. (SAS drives must be the same part number; SATA drives can vary in part numbers)
- If RAID is selected and NVMe, SAS AND SATA drives are configured, then only the NVMe drives will be used in the RAID set. (NVMe drives must be the same part number; SAS & SATA drives can vary in part numbers)



## Core Options

- RAID must be selected if both Factory Installed OS and Smart Array controller (embedded or otherwise) are present.
- RAID 0 requires at least 1 drive.
- RAID 1 requires at least 2 or even number of drives.
- RAID 1 with Spare requires at least 3 drives
- RAID 5 requires at least 3 drives.
- RAID 5 with Spare requires at least 4 drives.
- RAID 6 requires at least 4 drives.
- If SR932i-p/ SR416i-o/ MR416i-p/ MR416i-o/ MR408i-o is the Primary controller, then all RAID levels are allowed.
- If MR216i-o/MR216i-p/ Intel® VROC Standard is the primary controller, then only following RAID levels are allowed: 0, 1 (available from RAID FIO settings at HPE factory).
- The Intel® VROC Standard is available for RAID support 0, 1, 5 at the field.
- If Intel® VROC Premium is the primary controller, then the following RAID levels are allowed: 0, 1, 5 (available from RAID FIO settings at HPE factory).
- The Intel® VROC Premium is available for RAID support 0, 1, 5, 10 at the field.
- If Direct Attach is the Primary controller, then RAID is NOT allowed.
- If RAID is being selected in a configuration with Intel® VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.
- For HPE Customer Defined RAID Setting (389692-B21) only:
  - o If this part number is selected then the following RAID rules do not apply:
    - Max of 1 RAID level per server.
    - All integrated hard drives must match
    - Minimum drive quantity requirement for each RAID level.
    - RAID level must be selected if Factory Installed OS is present and Smart Array SAS controller (embedded or otherwise) is the primary controller.
  - o If this part number is selected, then at least 1 hard drive must be on the order.
  - o If this part number is selected, then preinstalled OS must be on the order.
  - o A Customer Intent Document must be supplied if this part number is ordered. This Customer Intent Document should include all details about the desired RAID custom configuration. (This includes drive part #s and quantities, RAID levels desired, which drives should be applied to each RAID level, and if a preinstalled OS has been ordered - which RAID set it should be installed on )
  - o Warning message to be displayed in the configurators if "HPE Customer Defined RAID Setti ALL" is selected with one Internal controller. HPE Recommends using below standard RAID Settings.
    - 339777-B21 - HPE RAID 0 Drive 1 FIO Setting
    - 339778-B21 - HPE RAID 1 Drive 1 FIO Setting
    - 339779-B21 - HPE RAID 5 Drive 1 FIO Setting
    - 339780-B21 - HPE RAID 5 w/SP Drive 1 FIO Setting
    - 339781-B21 - HPE Raid Adv Data Guarding FIO
  - o If RAID is being selected in a configuration with Intel® VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.

### Drive cage and backplane (8 SFF CTO server only)

User Selection: Min 0 // Max 2 . If front drives are needed in the 8 SFF server, please select one backplane from list below.

**Notes:** No optional backplanes available for LFF models, 4-bay 12G x1 SAS/SATA already included with server.



## Core Options

HPE DL360 Gen11 Basic Carrier (BC) drive cages and drive backplanes

### Notes:

- For all backplanes below:
  - o Supports Basic Carrier Drives.
  - o Includes cabling.

HPE ProLiant DL360 Gen11 8SFF x1 U.3 Tri-Mode Backplane Kit

P48895-B21

### Notes:

- Supports SATA, SAS and NVMe Basic Carrier (BC) drives.
- NVMe SSDs must be U.3.
- No NVMe Direct Attach support.
- Not supported with SR932i-p Tri-Mode controller.
- Supports HPE Gen11 SAS/SATA controller if only SAS/SATA drives are installed

HPE ProLiant DL360 Gen11 8SFF x4 U.3 Tri-Mode Backplane Kit

P48896-B21

**Notes:** For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR416i-p/ MR216i-p and MR416i-o/ MR216i-o/ MR408i-o are selected, then both "HPE DL360 Gen11 8SFF PCIe Cbl Kit or HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.

HPE ProLiant DL360 Gen11 2SFF x4 U.3 BC Tri-Mode Enablement Kit

P48899-B21

### Notes:

- Supports SATA, SAS and NVMe Basic Carrier (BC) drives.
- NVMe SSDs must be U.3.
- Supports NVMe Direct Access and slotted Tri-Mode controllers.
- Includes Direct Access cables and backplane power cables
- Mixing SR and MR internal controllers is not allowed
- Requires 8 SFF cables (P48909-B21 HPE ProLiant DL360 Gen11 8SFF PCIe Controller Cable Kit) for Tri-Mode PCIe standup controllers.
- Requires 8 SFF cables (P52416-B21 HPE ProLiant DL360 Gen11 OROC Tri-Mode Cable Kit) for OCP3.0 controllers
- Requires 2 SFF cables (P48910-B21 HPE ProLiant DL360 Gen11 2SFF Tri-Mode Controller Cable Kit) for Tri-Mode PCIe standup and OCP3.0 controllers.
- Max 1 of 8SFF Drive cage can be selected per server.
- If 8SFF drive cage is selected without 2SFF Drive cage, then Max 1 of internal controller can be selected.
- If 2SFF drive cage is selected, then 8SFF Drive cage must be selected.
- Drive cages will be connected to Motherboard (Direct Attach) if no Internal controller is selected. Direct Attach is capable of supporting all the drives (SATA or NVMe).
- If 8SFF x1 drive cage is connected to Direct Attach (without internal controller and 8SFF cable), then only SATA drive can be selected in this drive cage.
- If 8SFF x4 drive cage is connected to Direct Attach (without internal controller and 8SFF cable), then only NVMe drive can be selected in this drive cage.
- If 2SFF U.3 drive cage is connected to Direct Attach (without internal controller and 2SFF cable), then either SATA or NVMe drive can be selected in this drive cage.
- For 2SFF U.3 drive cage selection in 1 Processor configuration: If 2SFF Drive cage is connected to Direct Attach (without Internal controller and 2SFF cable) and NVMe drive is selected, then "CPU1 to OCP2 x8" and "OCP1 x16" OCP upgrade kit cannot be selected.
- For 8SFF x1 U.3 drive cage alone selection without 2SFF Drive cage: If SR932i-p/ MR416i-p/ MR216i-p is selected, then "HPE DL360 Gen11 8SFF PCIe Cbl Kit" must be ordered.
- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage:
  - If SR932i-p/ MR416i-p/ MR216i-p is alone selected, then both "HPE DL360 Gen11 8SFF PCIe Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.



## Core Options

- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage: If SR416i-o MR416i-o/ MR216i-o is alone selected, then both "HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage: If 1 quantity of MR408i-o is alone selected, then "HPE DL360 Gen11 OROC TM Cbl Kit" must be selected.
- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage: If 2 quantity of MR408i-o is selected, then both "HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage: If 1 quantity of MR408i-o is alone selected, then "HPE DL360 Gen11 2SFF TM Cbl Kit" cannot be selected.
- For 8SFF x1 U.3 drive cage selection with 2SFF Drive cage: If SR932i-p, MR416i-p, MR216i-p, SR416i-o, MR416i-o, MR216i-o controller is selected, then max 1 of the internal controllers can be selected per server.
- For 8SFF x4 U.3 drive cage alone selection without 2SFF Drive cage: If SR932i-p/ MR416i-p/ MR216i-p is selected, then "HPE DL360 Gen11 8SFF PCIe Cbl Kit" must be selected.
- For 8SFF x4 U.3 drive cage alone selection without 2SFF Drive cage: If SR416i-o/ MR416i-o/ MR216i-o is selected, then "HPE DL360 Gen11 OROC TM Cbl Kit" must be selected.
- For 8SFF x4 U.3 drive cage alone selection without 2SFF Drive cage: MR408i-o cannot be selected.
- For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage:
  - If SR932i-p is alone selected, then "HPE DL360 Gen11 8SFF PCIe Cbl Kit" or both "HPE DL360 Gen11 8SFF PCIe Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
  - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage:
    - If one quantity of MR416i-p/ MR216i-p is alone selected, then either "HPE DL360 Gen11 8SFF PCIe Cbl Kit" or "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected. Both the cables cannot be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If 1 quantity of SR416i-o/ MR416i-o/ MR216i-o is selected, then either "HPE DL360 Gen11 OROC TM Cbl Kit" or "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected. Both the cables cannot be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If 2 quantity SR416i-o/ MR416i-o/ MR216i-o is selected, then both "HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR408i-o is alone selected, then "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR408i-o is alone selected, then 8SFF cable kit cannot be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If MR416i-p/ MR216i-p and MR416i-o/ MR216i-o/ MR408i-o are selected, then both "HPE DL360 Gen11 8SFF PCIe Cbl Kit or HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
    - For 8SFF x4 U.3 drive cage selection with 2SFF Drive cage: If 2 quantities of MR416i-o/ MR216i-o/SR416i-o are selected, then both "HPE DL360 Gen11 OROC TM Cbl Kit" and "HPE DL360 Gen11 2SFF TM Cbl Kit" must be selected.
    - If 2SFF U.3 drive cage is connected to Direct Attach (without internal controller & 2SFF cable), then SATA drive cannot be selected in 2SFF drive cage when "NS204i-u Gen11 Ht Plg Boot Opt Dev" is selected.

HPE ProLiant DL3X0 Gen11 1U 8SFF Display Port/USB/Optical Drive Blank Kit

P48926-B21

### Notes:

- Universal Media Bay.
- For 8SFF CTO Svr only.
- Max 1 of 2SFF Drive cage or ODD cage can be selected per server.
- 8SFF CTO Model: If Optical drive is selected, then ODD Cage " HPE ProLiant DL3X0 Gen11 1U 8SFF Display Port/USB/Optical Drive Blank Kit " must be selected.

### Display Port

HPE ProLiant DL3X0 Gen11 1U LFF Display Port/USB Kit

P48928-B21



## Core Options

**Notes:** Supported with 4LFF CTO Model only.

### Optical Cable

HPE ProLiant DL360 Gen11 LFF Optical Cable Kit P48914-B21

### Optical Drive

HPE Mobile USB DVD-RW Optical Drive 701498-B21

**Notes:** This kit is supported on USB 3.0 ports only.

HPE 9.5mm SATA DVD-ROM Optical Drive 726536-B21

#### Notes:

- Requires Universal Media Bay Kit (P48926-B21) to install on 8 SFF models.
- Requires cable for optical drive (P48914-B21) to install on 4 LFF models.

HPE 9.5mm SATA DVD-RW Optical Drive 726537-B21

#### Notes:

- Requires Universal Media Bay Kit (P48926-B21) to install on 8 SFF models.
- Requires cable for optical drive (P48914-B21) to install on 4 LFF models.

HPE ProLiant DL360 Gen10 Plus LFF Optical Cable P26459-B21

**Notes:** Max 1

### USB Key

HPE 32GB microSD RAID 1 USB Boot Drive P21868-B21

### HDD Blank Kit

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

HPE Gen9 LFF HDD Spade Blank Kit 807878-B21

### Storage

#### Notes:

- Maximum limit for SAS/ SATA/ NVMe will vary depending upon the selected drive cage, controller and cable combination.
- User may select any combination of SAS or SATA Hard Drives. However, if RAID is selected and both SAS and SATA Hard Drives have been selected, then only the SAS Drives will be used in the RAID set. User may select any combination of SAS or SATA or NVMe Drives on U.3 cage with Tri-Mode controller. However, if RAID is selected with SAS, SATA and NVMe Drives, then only the NVMe Drives will be used in the RAID set.
- Direct Attach supports only SATA or NVMe drives. If SAS drive is selected, then Internal controller must be selected.
- If SAS drive is selected, then 8SFF drive cage must be selected.
- If 8SFFx1 drive cage is connected to Direct Attach (without internal controller and 8SFF cable), then only SATA drive can be selected in this drive cage.
- For SSD selection guidance, please visit: <http://ssd.hpe.com/>

### SSD – Read Intensive (max 8)

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

HPE 15.36TB SAS 24G Read Intensive SFF BC Multi Vendor SSD P49045-B21

HPE 7.68TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD P40509-B21

HPE 7.68TB SAS 24G Read Intensive SFF BC Multi Vendor SSD P49041-B21

HPE 3.84TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD P40508-B21

HPE 3.84TB SAS 24G Read Intensive SFF BC Multi Vendor SSD P49035-B21

HPE 1.92TB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD P40507-B21





## Core Options

HPE 1.92TB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49031-B21
HPE 960GB SAS 12G Read Intensive SFF BC Value SAS Multi Vendor SSD	P40506-B21
HPE 960GB SAS 24G Read Intensive SFF BC Multi Vendor SSD	P49029-B21
<b>Read Intensive - 6G SATA - SFF - Solid State Drives</b>	
HPE 7.68TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40501-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40500-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC S4520 SSD	P47322-B21
HPE 3.84TB SATA 6G Read Intensive SFF BC PM893 SSD	P44010-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40499-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC S4520 SSD	P47320-B21
HPE 1.92TB SATA 6G Read Intensive SFF BC PM893 SSD	P44009-B21
HPE 480GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40497-B21
HPE 480GB SATA 6G Read Intensive SFF BC PM893 SSD	P44007-B21
HPE 960GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40498-B21
HPE 960GB SATA 6G Read Intensive SFF BC PM893 SSD	P44008-B21
HPE 240GB SATA 6G Read Intensive SFF BC Multi Vendor SSD	P40496-B21
<b>Read Intensive - 12G SAS - LFF -Solid State Drives</b>	
HPE 7.68TB SAS 24G Read Intensive LFF LPC Multi Vendor SSD	P49040-B21
<b>Read Intensive - 6G SATA - LFF - Solid State Drives</b>	
HPE 960GB SATA 6G Read Intensive LFF LPC Multi Vendor SSD	P47808-B21
<b>SSD – Mixed Use (max 8)</b>	
<b>Mixed Use - 12G SAS - SFF - Solid State Drives</b>	
HPE 6.4TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49057-B21
HPE 3.84TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40512-B21
HPE 3.2TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49053-B21
HPE 1.92TB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40511-B21
HPE 1.6TB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49049-B21
HPE 960GB SAS 12G Mixed Use SFF BC Value SAS Multi Vendor SSD	P40510-B21
HPE 800GB SAS 24G Mixed Use SFF BC Multi Vendor SSD	P49047-B21
<b>Mixed Use - 6G SATA - SFF - Solid State Drives</b>	
HPE 3.84TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40505-B21
HPE 3.84TB SATA 6G Mixed Use SFF BC S4620 SSD	P47327-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40504-B21
HPE 1.92TB SATA 6G Mixed Use SFF BC PM897 SSD	P44013-B21
HPE 960GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40503-B21
HPE 960GB SATA 6G Mixed Use SFF BC PM897 SSD	P44012-B21
HPE 480GB SATA 6G Mixed Use SFF BC Multi Vendor SSD	P40502-B21
HPE 480GB SATA 6G Mixed Use SFF BC S4620 SSD	P47324-B21
HPE 480GB SATA 6G Mixed Use SFF BC PM897 SSD	P44011-B21
<b>Mixed Use - 12G SAS - LFF -Solid State Drives</b>	
HPE 960GB SAS 12G Mixed Use LFF LPC Value SAS Multi Vendor SSD	P37009-B21
<b>HDD- Enterprise 15K/10K (max 8)</b>	
<b>Mission Critical - 12G SAS - SFF SED Drives</b>	
HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Self-encrypting HDD	P28618-B21



## Core Options

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

### Enterprise - 12G SAS - SFF Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD P28352-B21

HPE 1.8TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty 512e Multi Vendor HDD P53562-B21

HPE 1.2TB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD P28586-B21

HPE 1TB SAS 12G Business Critical 7.2K SFF BC 1-year Warranty HDD P53563-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 300GB SAS 12G Mission Critical 15K SFF BC 3-year Warranty Multi Vendor HDD P28028-B21

HPE 300GB SAS 12G Mission Critical 10K SFF BC 3-year Warranty Multi Vendor HDD P40430-B21

### HDD – Midline – 7.2K (max 8)

#### Midline - 12G SAS - SFF Drives

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

#### Midline - 6G SATA - SFF Drives

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

HPE 1TB SATA 6G Business Critical 7.2K SFF BC 1-year Warranty HDD P28610-B21

#### Midline - 12G SAS - LFF Drives

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

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

HPE 16TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD P23608-B21

HPE 14TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD P09155-B21

HPE 12TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD 881781-B21

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

HPE 8TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD 834031-B21

HPE 6TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e Multi Vendor HDD 861746-B21

HPE 4TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD 833928-B21

HPE 2TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD 833926-B21

#### Midline - 6G SATA - LFF Drives

HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD P53554-B21

HPE 18TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD P37678-B21

HPE 16TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD P23449-B21

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

HPE 12TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e Multi Vendor HDD 881787-B21

HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD P53557-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 4TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD 861683-B21

HPE 2TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD 861681-B21

HPE 1TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Multi Vendor HDD 861686-B21

### NVMe – SSD and AIC – Read Intensive (max 8)

#### Read Intensive - NVMe - SFF - Solid State Drives

HPE 15.36TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD P50224-B21

HPE 7.68TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD P50222-B21

HPE 7.68TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD P47847-B21

HPE 3.84TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD P50219-B21

HPE 3.84TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD P47846-B21

HPE 1.92TB NVMe Gen4 High Performance Read Intensive SFF BC U.3 PM1733a SSD P50216-B21



## Core Options

HPE 1.9TB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47845-B21
HPE 960GB NVMe Gen4 Mainstream Performance Read Intensive SFF BC U.3 Static Multi Vendor SSD	P47844-B21
<b>NVMe – SSD and AIC – Mixed Use (max 8)</b>	
<b>Mixed Use - NVMe - SFF - Solid State Drives</b>	
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50233-B21
HPE 6.4TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47840-B21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50230-B21
HPE 3.2TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47839-B21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a SSD	P50227-B21
HPE 1.6TB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47838-B21
HPE 800GB NVMe Gen4 Mainstream Performance Mixed Use SFF BC U.3 Static Multi Vendor SSD	P47837-B21

## Factory Configuration Settings

Each of the following may be selected if desired at time of factory integration

### Battery Upgrade Removal Setting

HPE FIO No Smart Storage Battery	P06141-B21
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#### Notes:

- If "HPE FIO No Smart Storage Battery" is selected, then SR932/ MR416/ SR416/ MR408 controller does not require selection of Battery.
- If "HPE FIO No Smart Storage Battery" is selected, then SR932/ MR416/ SR416/ MR408 controller must be selected.
- If "HPE FIO No Smart Storage Battery" is selected, then Battery cannot be selected.

### BIOS Mode

HPE ProLiant DL300 Gen10 Plus Platform RAS OS Control FIO Setting	P27078-B21
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**Notes:** OS First – RAS Setting Trigger.

### Cray Compute Node Identifier

HPE Cray Compute Node FIO Configuration	R9H92A
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**Notes:** Can only be selected or configured for a Cray or Slingshot Solution. Not allowed for Non-Cray or Non-Slingshot Solutions.

### Cray User-Defined Non-Compute Node Identifier

HPE Cray EX Service Node 1 FIO Configuration	R4L49A
HPE Cray EX Service Node 2 FIO Configuration	R4L50A
HPE Cray EX Service Node 3 FIO Configuration	R4L51A
HPE Cray EX Service Node 4 FIO Configuration	R4L52A
HPE Cray EX Service Node 5 FIO Configuration	R4L53A
HPE Cray EX Service Node 6 FIO Configuration	R4L54A
HPE Cray EX Service Node 7 FIO Configuration	R4L55A
HPE Cray EX Service Node 8 FIO Configuration	R4L56A
HPE Cray EX Service Node 9 FIO Configuration	R4L57A
HPE Cray EX Service Node 10 FIO Configuration	R4L58A
HPE Cray EX Service Node 11 FIO Configuration	R4L59A
HPE Cray EX Service Node 12 FIO Configuration	R4L60A
HPE Cray EX Service Node 13 FIO Configuration	R4L61A
HPE Cray EX Service Node 14 FIO Configuration	R4L62A
HPE Cray EX Service Node 15 FIO Configuration	R4L63A



## Core Options

HPE Cray EX Service Node 16 FIO Configuration	R4L64A
HPE Cray EX Service Node 17 FIO Configuration	R4L65A
HPE Cray EX Service Node 18 FIO Configuration	R4L66A
HPE Cray EX Service Node 19 FIO Configuration	R4L67A
HPE Cray EX User Access Node FIO Configuration	R4L68A

### iLO Common Password

HPE iLO Common Password FIO Setting	P08040-B21
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#### Notes:

- It is advisable to match the order quantity of this SKU matching the quantity of servers being ordered.
- Below Warning message to be displayed in the configurators upon the selection of this SKU:
- "Use of iLO Common Password SKU sets the initial iLO password to be a well-known string rather than a random password. It is advisable to match the order quantity of this SKU matching the quantity of servers being ordered."
- HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

### Logical Size Settings

HPE 200GB Logical Size FIO Setting	436007-B21
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**Notes:** If "HPE 200GB Logical Size FIO Setting" is selected, then RAID level must be selected.

### Memory Setting

HPE Smart Memory Fast Fault Tolerance FIO Setting	875293-B21
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#### Notes:

- If Memory Fast Fault Tolerance kit is selected with 1 Processor and Single Rank memory, then Memory Min = 2 and Max= 16.
- If Memory Fast Fault Tolerance kit is selected with 1 Processor and Dual/Quad/ Octal Rank memory then, Memory Min = 1 and Max= 16.
- If Memory Fast Fault Tolerance kit is selected with 2 Processors and Single Rank memory, then Memory Min = 4 and Max= 32.
- If Memory Fast Fault Tolerance kit is selected with 2 Processors and Dual/Quad/ Octal Rank memory, then Memory Min = 2 and Max= 32

### OEM Configuration Setting

HPE OEM FIO Server Unbranding Service	P44105-B21
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### Trusted Supply Chain

HPE Trusted Supply Chain for HPE ProLiant	P36394-B21
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#### Notes:

- If "HPE Trusted Supply Chain FIO Config" is selected then "Gen11 Intrusion Cbl Kit" must be selected.
- If HPE Trusted Supply Chain FIO Config is selected, then Configurator should default "Gen11 Intrusion Cbl Kit".
- If "HPE Trusted Supply Chain FIO Config" is selected, then "HPE iLO Adv 1-svr Lic 3yr Support" or "HPE OneView for DL 3y 24x7 FIO Phys 1 Svr Lic" or "HPE iLO Adv 1-svr Lic 1yr Support" must be selected.
- If HPE Trusted Supply Chain FIO Config is selected then Configurator should default 1Qty of "HPE iLO Adv 1-svr Lic 3yr Support" and customer will be allowed to deselect. If deselects then either "HPE OneView for DL 3y 24x7 FIO Phys 1 Svr Lic" or "HPE iLO Adv 1-svr Lic 1yr Support" must be selected.
- If HPE Trusted Supply Chain FIO Config is selected, configurator to display the following Warning Message: "Logistics delivery speeds/services are available, please select within NGQ"



## Core Options

- If "HPE Trusted Supply Chain FIO Config" is selected then HPE Trusted Supply Chain E-LTU Software is required per order (not per server).
- If HPE Trusted Supply Chain FIO Config is selected then Configurator should default Trusted Supply Chain E-LTU Software.
- Display the following note for the Trusted Supply Chain section in OCA Menu view: "If Trusted Supply Chain section is selected, only one instance of the following E-LTU software option is required per order (not per server): HPE Trusted Supply Chain E-LTU."

## Riser Cards

Standard Primary (Butterfly) Riser: (embedded in all CTO and BTO Server)

- Slot 1 - 1x PCIe 5.0 x16 FHHL
- Slot 2 - 1x PCIe 5.0 x16 LP

**Notes:** If Hot-plug NS204i-u is installed, the Slot 2 cage need to be removed

HPE ProLiant DL360 Gen11 x16 Full Height Riser Kit

P48901-B21

### Notes:

- Referred as Secondary FH riser.
- 2<sup>nd</sup> Processor is required.
- Slot 3: 1x PCIe5.0 x 16 FHHL
- If both 4P Networking (Base-T and Full-Height) and Half-Height Internal PCIe controller are selected, then Secondary FH riser cannot be selected.

HPE ProLiant DL360 Gen11 x16 LP Riser Kit

P48903-B21

### Notes:

- Referred as Secondary Low Profile (LP) riser.
- 2<sup>nd</sup> Processor is required.
- Slot 3: 1x PCIe5.0 x 16 LP

Riser Information ***										
Part number	Description	Riser position		Slot Bus width (Gen5 lanes)			GPU Support	NVMe Direct Connect		M.2 Connec.
		Prim.	Sec.	#1	#2	#3		Connectors	Max SSDs	
(default in chassis)	HPE DL360 Gen11 x16/x16 Primary Riser	D	N/A	x16	x16	N/A	Y	N/A	N/A	N/A
<b>P48901-B21</b>	HPE ProLiant DL360 Gen11 x16 Full Height Riser Kit <sup>1</sup>	N/A	O	N/A	N/A <sup>1</sup>	x16	Y	N/A	N/A	N/A
<b>P48903-B21</b>	HPE ProLiant DL360 Gen11 x16 LP Riser Kit	N/A	O	N/A	N/A	x16	Y <sup>2</sup>	N/A	N/A	N/A

### Notes:

- D = Default on server; O = Optional; N = not supported or slot/connector not present.
- Quantity of Processor and Quantity of Heatsink must match.
- <sup>1</sup>When secondary full height kit is installed, then primary PCIe Slot 2 cannot be used. Only 2 full height slots are supported.
- <sup>2</sup>GPU max 75W
- If Secondary riser is selected, then 2 Processor must be selected.
- If secondary riser is not selected and "NS204i-u Rear Cbl Kit" is not selected, then maximum 2 quantity of PCIe cards can selected.
- If secondary FH riser is not selected, then maximum 1 quantity of FH PCIe cards can selected.
- If secondary riser is not selected and "NS204i-u Rear Cbl Kit" is selected, then maximum 1 quantity of PCIe cards can selected.

## Core Options

- If Secondary FH riser is selected, then maximum 2 quantity of PCIe cards can be selected.
- If Secondary LP riser is selected and "NS204i-u Rear Cbl Kit" is not selected, then maximum 3 quantity of PCIe cards can be selected.
- If Secondary LP riser and "NS204i-u Rear Cbl Kit" are selected, then maximum 2 quantity of PCIe cards can be selected.
- 4 ports base-T Low Profile NIC adapters are not allowed to be installed at Slot 2 (P51178-B21, P21106-B21)
- All DL360 Gen11 Riser cards are designed in x16 PCIe slot form factor (physical length) as well as in full x16 lanes of PCIe5.0 as electrical bandwidth.

## PCIe Slotting

### Configuration 1: Primary Riser only (default in chassis)

Riser	(Primary as default)	
Slot Number	Slot 1	Slot 2
Bus Width	x16	x16
Form Factor	FHHL	HHHL (LP)
PCIe adapter	Slot Priority	
-PCIe x16	1	2
-PCIe x8	1	2
-PCIe x4	1	2
-PCIe x1	1	2

### Configuration 2: Primary Riser (default in chassis) & Secondary FH Riser, 2 CPUs

Riser	(Primary as default)		Secondary (P48901-B21)
Slot Number	Slot 1		Slot 3
Bus Width	x16	N/A	x16
Form Factor	FHHL		FHHL
PCIe adapter	Slot Priority		
-PCIe x16	1		2
-PCIe x8	1	N/A	2
-PCIe x4	1		2
-PCIe x1	1		2

### Configuration 3: Primary Riser (default in chassis) & Secondary HH/LP Riser, 2 CPUs

Riser	(Primary riser as default)		Secondary (P48903-B21)
Slot Number	Slot 1	Slot 2	Slot 3
Bus Width	x16	x16	x16
Form Factor	FHHL	HHHL (LP)	HHHL (LP)
PCIe adapter	Slot Priority		
-PCIe x16	1	3	2
-PCIe x8	1	3	2
-PCIe x4	1	3	2
-PCIe x1	1	3	2
-2xControllers	1	2	N/A

## Core Options

### PCIe Adapters Slotting Rules

General	
Priority	Description & Rules
1	SR932i-p (P47184-B21) as a FH adapter, can only be slotted in PCIe Slot 1 (fixed cable length)
2	HPE ProLiant DL360 Gen11 x16 LP Riser Kit (P48903-B21) can only be slotted in HHHL (LP) PCIe Slot
3	If PCIe Standup Tri-Mode Controller adapter is ordered, can only be slotted in PCIe Slot 1 or Slot2. HHHL (LP) GPGPU card should be slotted in PCIe Slot 3.
4	PCIe Slot 2 supports HHHL (LP) cards only.
5	4-Port Base-T NIC card is not available in Slot2 (Mechanical constraint)
6	If NS204i-u Rear Cbl Kit (P54702-B21) is ordered, Slot 2 will be unavailable.

Installation Rules	
Priority	Description & Rules
1	x16 electrical bandwidth card to x16 electric slot
2	x8 electrical card to x8 electric slot
3	x8 electrical card to x16 electric slot

Priority from Card Types	
Priority	Description & Rules
1	HPE SR932i-p Gen11 x32 Lanes 8GB Wide Cache PCI SPDM Plug-in Storage Controller (P47182-001)
2	4-Port Networking PCIe Adapter (restricted in Slot 2)
3	HHHL (LP) Internal PCIe Controllers
4	GPGPU Adapters
5	Others

### OS Boot Device

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device	P48183-B21
HPE ProLiant DL360 Gen11 NS204i-u Front Cable Kit	P48920-B21
HPE ProLiant DL360 Gen11 NS204i-u Rear Cable Kit	P54702-B21

### DL360 Gen11 NS204i-u Enablement Kit Support Matrix

Enablement Kit	Description	Field Inst.	NS204i-u Location	Hot-plug Capability
P54702-B21	HPE ProLiant DL360 Gen11 NS204i-u Rear Cable Kit	Yes	PCIe Slot 2 <sup>2</sup>	Yes
P48920-B21	HPE ProLiant DL360 Gen11 NS204i-u Internal Cable Kit	Yes	Internal	N/A

#### Notes:

- <sup>1</sup>x4 PCIe Gen3.0 OS Boot device includes 2x 480GB M.2 NVMe SSDs, with preconfigured hardware RAID1.
- <sup>2</sup>With removing the original PCIe Slot 2 cage and re-install the dedicated DL360 Gen11 NS204i-u cage, latch and cables in the P54702-B21. The NS204i-u will take up PCIe Slot 2 space only. The PCIe Slot 1 (FHHL) and PCIe Slot 3 (to be Low Profile) are available in the system with the selection of optional "HPE ProLiant DL360 Gen11 x16 LP Riser Kit (P48903-B21)".
- If NS204i-u is selected, then either NS204i-u Internal or Rear cable must be selected and vice versa.
- Both NS204i-u Internal and Rear cable cannot be selected together.
- If Secondary FH riser is selected, then "NS204i-u Rear Cbl Kit" cannot be selected.
- If 2SFF U.3 drive cage is connected to Direct Attach (without internal controller & 2SFF controller cable), then SATA drive cannot be selected in 2SFF drive cage when "NS204i-u Gen11 Ht Plg Boot Opt Dev" is selected.
- For additional information, please see the [HPE OS Boot Device QuickSpecs](#)

## Core Options

NS204i-u thermal Information							
Location	Qty	Cooling	Up to 4LFF (14W SAS/SATA)	Up to 10SFF (25W NVMe)	Up to 10SFF (10W SAS/SATA)	Up to 8SFF (25W NVMe)	
Internal NS204i-u	1	High Performance Fan Kit (P48908-B21)	30C	Up to 2x270W CPU, 32x 128GB <sup>1</sup> DIMMs			30C
	1	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	30C	Up to 2x350W CPU, 32x 128 <sup>1</sup> GB DIMMs			30C
Hot-plug NS204i-u (at rear)	1	High Performance Fan Kit (P48908-B21)	30C	Up to 2x 270W CPU, 32x 128 <sup>1</sup> GB DIMM			30C
	1	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	30C	Up to 2x 350W CPU, 32x128 <sup>1</sup> GB DIMM			30C

### Notes:

- <sup>1</sup>If 256GB DIMM is selected, will require limit of ambient at 25C
- <sup>2</sup>If 256GB DIMM is selected with up to 10SFF NVMe, will need to operated at 23C. Will not be a festible configuration to support.
- If NS204i-u is selected, then either NS204i-u Internal or Rear cable must be selected and vice versa.
- Both NS204i-u Internal and Rear cable cannot be selected together.
- If Secondary FH riser is selected, then "NS204i-u Rear Cbl Kit" cannot be selected.

## Networking

The thermal conditions variate as a combination of types of Networking PCIe OR OCP adapter in different DL360 Gen11 CTO Servers. In general:

- Standard Fan Kit cannot be selected when above 100GbE
- 256GB DIMM is not allowed when above 100GbE
- Ambient limitation will variate in the combination of Networking Adapter OR OCP bandwidth, DIMM capacity and cable type, incl. Direct Attach Copper (AOC) cable and Active Optical Cable (DAC)

A detailed ambient temperature recommendation upon high-speed networking adapters is described in later session.

Default settings in 8SFF CTO Server and 4LFF CTO Server

- In 1 Processor configuration, "CPU1 to OCP2 x8 Enablement Kit" will be selected as default as "BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter" is pre-selected at OCP Slot 2, to be defaulted in the configurator if 1 Processor is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU1 to OCP2 x8 Enablement Kit" will be removed.
- "CPU2 to OCP2 x8 Enablement Kit" or "CPU2 to OCP2 x16 Enablement Kit" must be selected if OCP NIC is selected in 2 Processors configuration. "CPU2 to OCP2 x8 Enablement Kit" to be defaulted in the configurator if 2 Processors are selected. User should be allowed to remove "CPU2 to OCP2 x8 Enablement Kit" and should be forced select "CPU2 to OCP2 x16 Enablement Kit" if OCP NIC is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU2 to OCP2 x8 Enablement Kit" will be removed.





## Core Options

### InfiniBand PCIe

HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 MCX653105A-HDAT Adapter	P23664-B21
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 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter	P31324-B21
HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter	P45641-B21

#### Notes:

- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.
- If configured for a Cray or Slingshot Solution, option to be used as the Slingshot 10 networking card.
- With 2xCPU in the range of 186-270 Watt and NVMe storages, Performance Fan Kit and DAC must be selected; if AOC is selected, can only work below 27C ambient temperature
- With 2xCPU go beyond 271 Watt and NVMe storages, Closed-loop Liquid Cooling Heatsink & Fan bundle kit and DAC must be selected; AOC cannot be supported.
- The InfiniBand HDR Adapters are in PCIe 4.0 x16// FH or LP
- InfiniBand NDR Adapter is in PCIe 5.0 x16// HL/ HH
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.

### Ethernet PCIe

Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21
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#### Notes: PCIe 4.0 x8// HH or LP

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

- PCIe 4.0 x16// FH/ HL
- If secondary FH riser is not selected, then maximum 1 quantity of FH PCIe cards can be selected.
- If both 4P Networking (Base-T and Full-Height) and Half-Height Internal PCIe controller are selected, then Secondary FH riser cannot be selected.

Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE	P10180-B21
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#### Notes:

- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.
- If configured for a Cray or Slingshot Solution, option to be used as the Slingshot 10 networking card.
- PCIe 4.0 x16// HL/ HH/LP
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.

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

- Max 1 of 4 port card can be selected if secondary riser is not selected. Cannot be installed in Slot# 2.
- Max 2 of 4 port card can be selected if secondary riser is selected. Cannot be installed in Slot# 2.
- If both 4P Networking (Base-T and Full-Height) and Half-Height Internal PCIe controller are selected, then Secondary FH riser cannot be selected.
- PCIe 2.0 x4 // HH /HL/ LP





## Core Options

Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE	P21112-B21
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.</li> <li>– PCIe 4.0 x16// HL/ HH</li> <li>– If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.</li> </ul>	
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	P25960-B21
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.</li> <li>– PCIe 4.0 x16// HL/ HH/ LP</li> <li>– If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.</li> </ul>	
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T Adapter for HPE	P26253-B21
<b>Notes:</b> PCIe 3.0 x8// HH/ HL/ LP	
Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ Adapter for HPE	P26259-B21
<b>Notes:</b> PCIe 3.0 x8// HH/ HL/ LP	
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P26262-B21
<b>Notes:</b> PCIe 3.0 x8// HH/ HL/ LP	
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE	P26264-B21
<b>Notes:</b> PCIe 4.0 x16// HH/ HL/ LP	
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P42044-B21
<b>Notes:</b> PCIe 4.0 x8// HH/ HL/ LP	
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T Adapter for HPE	P51178-B21
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Max 1 of 4 port card can be selected if secondary riser is not selected. Cannot be installed in Slot# 2.</li> <li>– Max 2 of 4 port card can be selected if secondary riser is selected. Cannot be installed in Slot# 2.</li> <li>– If both 4P Networking (Base-T and Full-Height) and Half-Height Internal PCIe controller are selected, then Secondary FH riser cannot be selected.</li> <li>– PCIe 2.0 x4// HH/ HL/ LP</li> </ul>	
HPE Slingshot SA210S Ethernet 200Gb 1-port PCIe NIC	R4K46A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Can only be selected or configured for a Cray or Slingshot Solution. Not allowed for a Non-Cray or Non-Slingshot Solution</li> <li>– Cannot have the following networking options configured within the same server: Slingshot 11 or Slingshot 22.</li> <li>– PCIe 4.0 x16// LP</li> <li>– If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.</li> </ul>	
HPE Slingshot SA410S Ethernet 400Gb 1-port PCIe NIC	R9Y95A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Can only be selected or configured for a Cray or Slingshot Solution. Not allowed for a Non-Cray or Non-Slingshot Solution</li> <li>– Cannot have the following networking options configured within the same server: Slingshot 11 or Slingshot 22.</li> </ul>	



## Core Options

- OCA to keep option visibility only in Pre-Release for Cray & Slingshot Solutions. Option should not be visible in OCA production until NPI / GA Date is achieved.
- PCIe 5.0 x16// FH or LP
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.

### Ethernet OCP

2 OCP slots in Motherboard. Does not consume PCIe slot.

Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P08449-B21
Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T OCP3 Adapter for HPE	P10097-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10106-B21
Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P10115-B21
Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE	P22767-B21

#### Notes:

- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.
- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- If any one of "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" is selected, then Max 1 of x16 (>=100G) card can be selected per server.
- If both "CPU1 to OCP1 x16" and "CPU2 to OCP2 x16" are selected, then Maximum 2 of x16 (>=100G) card can be selected per server.
- If selected with 350W Processor with low Tcase (6458Q/ 8470Q), Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit must be selected, only 8x SATA drive can be selected. And limit ambient temperature at 25C is required.
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.

Broadcom BCM57412 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE	P26256-B21
Broadcom BCM57504 Ethernet 10/25Gb 4-port SFP28 OCP3 Adapter for HPE	P26269-B21

#### Notes:

- Warning Message has to be displayed in the configurator any time this OCP card is selected: "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" OCP Upgrade kit can be selected with this OCP card if customer wants to have OCP x16 connectivity. With below restriction:
  - o OCP Slot 2 is the default OCP networking slot with the Share NIC & Wake-on-Lane features. The "CPU1 to OCP1 x16" will be available in only one OCP Networking card configuration, after April 2023.
  - o Yet the "CPU2 to OCP2x16" OCP Upgrade kit will be only available in two processor configurations.

Mellanox MCX631432AS-ADAI Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE	P42041-B21
Broadcom BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter for HPE	P51181-B21

**Notes:** "BCM 5719 1Gb 4p BASE-T OCP Adptr" to be defaulted in the configurator. Customer is allowed to remove and select other cards (PCIe or OCP) from Networking OR InfiniBand OR Smart IO (HW) OR Storage Offload category.

### Fibre Channel HBA

HPE SN1610Q 32Gb 1-port Fibre Channel Host Bus Adapter	R2E08A
HPE SN1610Q 32Gb 2-port Fibre Channel Host Bus Adapter	R2E09A
HPE SN1610E 32Gb 1-port Fibre Channel Host Bus Adapter	R2J62A
HPE SN1610E 32Gb 2-port Fibre Channel Host Bus Adapter	R2J63A

**Notes:** PCIe 3.0 x8// FH or LP for SN1610Q/1610E



## Core Options

### Tranceivers

HPE BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
HPE BladeSystem CClass Virtual Connect 1G SFP RJ45 Transceiver	453154-B21
HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
HPE BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21
HPE 25Gb SFP28 SR 100m Transceiver	845398-B21
HPE 100Gb QSFP28 MPO SR4 100m Transceiver	845966-B21
HPE QSFP28 to SFP28 Adapter	845970-B21
HPE 100GbE QSFP28 SR4 100m Transceiver	Q2F19A

#### Notes:

- Each storage offload card requires selection of 2 QTY (Min/Max=2 per card) of either "100GbE QSFP28 PSM4 500m XCVR" OR "100GbE QSFP28 SR4 100m XCVR" transceivers.
- Configurator has to default 2 QTY of "100GbE QSFP28 SR4 100m XCVR" per storage offload card selection. However, customer is allowed to deselect "100GbE QSFP28 SR4 100m XCVR" and must select "100GbE QSFP28 PSM4 500m XCVR"
- If these transceivers selected, then Storage offload card must be selected.
- Selection of this transceiver must be in multiples of 2.

HPE 100GbE QSFP28 500m 1310mm PSM4 Transceiver	Q8J73A
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#### Notes:

- Each storage offload card requires selection of 2 QTY (Min/Max=2 per card) of either "100GbE QSFP28 PSM4 500m XCVR" OR "100GbE QSFP28 SR4 100m XCVR" transceivers.
- Configurator has to default 2 QTY of "100GbE QSFP28 SR4 100m XCVR" per storage offload card selection. However, customer is allowed to deselect "100GbE QSFP28 SR4 100m XCVR" and must select "100GbE QSFP28 PSM4 500m XCVR"
- If these transceivers selected, then Storage offload card must be selected.
- Selection of this transceiver must be in multiples of 2.

HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable	Q9S71A
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#### Notes:

- Each storage offload card requires selection of 2 QTY (Min/Max=2 per card) of "HPE 100GbE QSFP28 to QSFP28 5m AOC".
- Configurator to default 2 QTY of "HPE 100GbE QSFP28 to QSFP28 5m AOC" per storage offload card selection.
- If these transceivers selected, then Storage offload card must be selected.
- Category max is not applicable. However, 2 QTY (Min/ Max=2) per storage offload card to be selected.
- Selection of this AOC cable must be in multiples of 2.

### OCP3.0 Slot Priority Support Matrix

DL360 Gen11 Rear wall		Selected OCP cards (Qty & type)				
		2	1	1	1	2
OCP Slots #	Share NIC Feature	1xOROC <sup>1</sup> + 1x NIC <sup>2</sup>	1xNIC	2xNICs	1xOROC	2x OROCs
1	N/A	OROC	(Secondary)	NIC	OROC (Primary)	OROC <sup>4</sup> (Primary)
2	Available (Incl. Wake-on-Lane)	NIC	NIC (Primary)	NIC (Primary)	N/A <sup>3</sup>	OROC <sup>4</sup>

#### Notes:

- <sup>1</sup>OCP form factor internal controller
- <sup>2</sup>OCP Networking card



## Core Options

- <sup>3</sup>If only 1 OROC card is selected, by default connected from 8SFF backplane to OCP Slot1. And there is no controller cable can connect from 8SFF Backplane to OCP Slot 2.
- <sup>4</sup>If 2 OROC cards are selected, by default the 8SFF controller cable is connected to OCP Slot1 (the comparably higher-end OROC card to be selected by default) and the 2SFF backplane is connected to OCP Slot2 with another OROC card selected (comparably less high-end one) with 2FF controller cable.

OCP3.0 Enablement Kits				
PCIe signal	Upgrade Cable Kits		PCIe5.0 lanes availability	
	Orderable SKU	Description	OCP Slot #1	OCP Slot #2
CPU1	(x8 PCIe5.0 embedded from MLB)		(default x8)	N/A
	P51911-B21 <sup>1</sup>	HPE ProLiant DL360 Gen11 CPU1 to OCP2 x8 Enablement Kit	(default x8)	X8
	P48827-B21 <sup>2</sup>	HPE ProLiant DL3XX Gen11 OCP1 x16 Enablement Kit	x16	N/A
CPU1 & CPU2	P48828-B21	HPE ProLiant DL3XX Gen11 OCP2 x16 Enablement Kit	(default x8)	x16
	P48827-B21 & P48828-B21	HPE ProLiant DL3XX Gen11 OCP1 x16 Enablement Kit	x16	x16
	P48828-B21	HPE ProLiant DL3XX Gen11 OCP2 x16 Enablement Kit	(default x8)	x16
	P48830-B21	HPE ProLiant DL3XX Gen11 CPU2 to OCP2 x8 Enablement Kit	(default x8)	x8
	P51911-B21 <sup>3</sup>	HPE ProLiant DL360 Gen11 CPU1 to OCP2 x8 Enablement Kit	(default x8)	x8
	P48827-B21 & P48830-B21	HPE ProLiant DL3XX Gen11 OCP1 x16 Enablement Kit	x16	x8
	P48830-B21	HPE ProLiant DL3XX Gen11 CPU2 to OCP2 x8 Enablement Kit	(default x8)	x8

### Notes:

- <sup>1</sup>OCP Slot 2 is the primary slot for OCP NIC card for its Share NIC (incl. WoL) feature. When only 1 OCP NIC is selected, the P51911-B21 will be populated.
- <sup>2</sup>After April 2023, in 1 CPU configuration, to offer flexibility for customers to assign OCP NIC to Slot 1 (if Share NIC & WoL are not required), the P48827-B21 can be manually selected, and P51911-B21 will be removed when P48827-B21 is selected. (The 2 cables cannot co-exist in 1 CPU configuration)
- <sup>3</sup>After April 2023, in 2 CPUs Configuration, to connect all OCP Slots from CPU1, the P51911-B21 can be selected.

## OCP Slotting

Configuration 1: No OCP enablement kit or only P48827-B21 is selected		
Slot Number	Slot 1	Slot 2 (Share NIC, incl. Wake-on-Lane)
OCP Enablement	N/A or P48827-B21	N/A
Bus Width	x8 (default) or x16	N/A
OCP adapter	Slot Priority	
-Controller	1	N/A
-Networking	1	N/A

Configuration 2: Only P51911-B21 is selected		
Slot Number	Slot 1	Slot 2 (Share NIC, incl. Wake-on-Lane)
OCP Enablement	N/A	P51911-B21
Bus Width	x8 (default)	x8
OCP adapter	Slot Priority	
-Controller	1	2
-Networking	2	1



## Core Options

Configuration 3: Only P48830-B21 is selected, or both P48827-B21 & P48830-B21 are selected		
Slot Number	Slot 1	Slot 2 (Share NIC, incl. Wake-on-Lane)
OCP Enablement	N/A or P48827-B21	P48830-B21
Bus Width	x8 (default) or x16	x8
OCP adapter	Slot Priority	
-Controller	1	2
-Networking	2	1

Configuration 4: Only P48828-B21 is selected, or both P48827-B21 & P48828-B21 are selected		
Slot Number	Slot 1	Slot 2 (Share NIC, incl. Wake-on-Lane)
OCP Enablement	N/A or P48827-B21	P48828-B21
Bus Width	x8 (default) or x16	x16
OCP adapter	Slot Priority	
-Controller	1	2
-Networking	2	1

### OCP Cards Slotting Rules

General	
Priority	Description & Rules
1	OCP Networking card to be installed in Slot 2 as priority, as the Slot 2 supports ShareNIC (incl. Wake-on-Lane).
2	2x OCP Controllers (OROC): Tri-Mode Controllers are in higher priority than SAS Controllers.
3	2x OCP Networking cards: High Speed NIC is in higher priority to be installed in Slot 2.
4	If no OCP Slot 2 Enablement Kit is selected, the OCP Slot 2 is occupied.
5	If no OCP Slot 1 Enablement Kit is selected, the OCP Slot 1 is default in x8 electrical lanes (embedded from MLB)

### OCP3.0 Enablement Kit details

- In 1 Processor configuration, "CPU1 to OCP2 x8 Enablement Kit" will be selected as default as "BCM5719 Ethernet 1Gb 4-port BASE-T OCP3 Adapter" is pre-selected at OCP Slot 2, to be defaulted in the configurator if 1 Processor is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU1 to OCP2 x8 Enablement Kit" will be removed.
- "CPU2 to OCP2 x8 Enablement Kit" or "CPU2 to OCP2 x16 Enablement Kit" must be selected if OCP NIC is selected in 2 Processors configuration. "CPU2 to OCP2 x8 Enablement Kit" to be defaulted in the configurator if 2 Processors are selected. User should be allowed to remove "CPU2 to OCP2 x8 Enablement Kit" and should be forced select "CPU2 to OCP2 x16 Enablement Kit" if OCP NIC is selected. Customer is allowed to remove if OCP NIC is not selected but need to be replaced by a PCIe standup NIC. Meanwhile, the "CPU2 to OCP2 x8 Enablement Kit" will be removed.

HPE ProLiant DL3XX Gen11 OCP1 x16 Enablement Kit

P48827-B21

#### Notes:

- For 2SFF U.3 drive cage selection in 1 Processor configuration:
- If 2SFF Drive cage is connected to Direct Attach (without Internal controller and 2SFF cable) and NVMe drive is selected, then "CPU1 to OCP2 x8" and "OCP1 x16" OCP upgrade kit cannot be selected.
- For 2SFF U.2 drive cage selection in 1 Processor configuration:
- If 2SFF Drive cage is connected to Direct Attach (without Internal controller and 2SFF cable), then "CPU1 to OCP2 x8" and "CPU1 to OCP1 x16" OCP upgrade kit cannot be selected.
- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- If no OCP enablement kit is selected, then Max 1 of OCP/ OROC can be selected.
- "CPU1 to OCP2 x8" and "CPU1 to OCP1 x16" cannot be selected together.



## Core Options

- If any one of "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" is selected, then Max 1 of x16 (>=100G) card can be selected per server.
- If both "CPU1 to OCP1 x16" and "CPU2 to OCP2 x16" are selected, then Maximum 2 of x16 (>=100G) card can be selected per server.
- If 8SFF x4 and 2SFF Drive cages are selected without controller, then "CPU1 to OCP1 x16" and "CPU1 to OCP2 x8" cannot be selected.
- Warning Message has to be displayed in the configurator any time this OCP card is selected:
- "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" OCP Upgrade kit can be selected with this OCP card if customer wants to have OCP x16 connectivity.

HPE ProLiant DL3XX Gen11 OCP2 x16 Enablement Kit

P48828-B21

### Notes:

- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- If no OCP enablement kit is selected, then Max 1 of OCP/ OROC can be selected.
- "CPU2 to OCP2 x16" and "CPU2 to OCP2 x8" cannot be selected together.
- If "CPU2 to OCP2 x16" or "CPU2 to OCP2 x8" is selected, then 2 Processor must be selected.
- If any one of "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" is selected, then Max 1 of x16 (>=100G) card can be selected per server.
- If both "CPU1 to OCP1 x16" and "CPU2 to OCP2 x16" are selected, then Maximum 2 of x16 (>=100G) card can be selected per server.
- Warning Message has to be displayed in the configurator any time this OCP card is selected:
- "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" OCP Upgrade kit can be selected with this OCP card if customer wants to have OCP x16 connectivity.

HPE ProLiant DL3XX Gen11 CPU2 to OCP2 x8 Enablement Kit

P48830-B21

### Notes:

- To be defaulted in the configurator if 2 Processor is selected. Customer is allowed to remove if OCP card is not selected.
- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- If no OCP enablement kit is selected, then Max 1 of OCP/ OROC can be selected.
- "CPU2 to OCP2 x16" and "CPU2 to OCP2 x8" cannot be selected together.
- If "CPU2 to OCP2 x16" or "CPU2 to OCP2 x8" is selected, then 2 Processor must be selected.

HPE ProLiant DL360 Gen11 CPU1 to OCP2 x8 Enablement Kit

P51911-B21

### Notes:

- For 2SFF U.3 drive cage selection in 1 Processor configuration:
- If 2SFF Drive cage is connected to Direct Attach (without Internal controller and 2SFF cable) and NVMe drive is selected, then "CPU1 to OCP2 x8" and "OCP1 x16" OCP upgrade kit cannot be selected.
- For 2SFF U.2 drive cage selection in 1 Processor configuration:
- If 2SFF Drive cage is connected to Direct Attach (without Internal controller and 2SFF cable), then "CPU1 to OCP2 x8" and "CPU1 to OCP1 x16" OCP upgrade kit cannot be selected.
- To be defaulted in the configurator if 1 Processor is selected. Customer is allowed to remove if OCP card is not selected.
- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- "CPU1 to OCP2 x8" and "CPU1 to OCP1 x16" cannot be selected together.
- "CPU1 to OCP2 x8" cannot be selected if 2 Processor is selected.
- If 8SFF x4 and 2SFF Drive cages are selected without controller, then "CPU1 to OCP1 x16" and "CPU1 to OCP2 x8" cannot be selected.



## Core Options

### OCP Infiniband

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:

- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.
- If configured for a Cray or Slingshot Solution, option to be used as the Slingshot 10 networking card.
- If selected with 350W Processor with low Tcase (6458Q/ 8470Q), Closed-loop Liquid Cooling Heatsink Fan FIO Bundle Kit must be chosen, and NVMe and SAS drive cannot be selected. Only max 8SFF SATA drive can be supported.
- If no OCP enablement kit is selected, then x16 OCP cannot be selected.
- If any one of "CPU1 to OCP1 x16" or "CPU2 to OCP2 x16" is selected, then Max 1 of x16 (>=100G) card can be selected per server.
- If both "CPU1 to OCP1 x16" and "CPU2 to OCP2 x16" are selected, then Maximum 2 of x16 (>=100G) card can be selected per server.
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.
- If the selected processor(s) is/are in the range of 271W to 350W TDP, and AOC cable is also selected, the ambient temperature would be limit at 25C

### Storage Offload

HPE NV60100M 100Gb 2-port Storage Offload Adapter

R8M41A

#### Notes:

- If 256GB Memory is selected, then high speed Networking/ InfiniBand card (PCIe and OCP) that is 100G or more cannot be selected.
- Category max is not applicable. However, 2 QTY (Min/ Max=2) per storage offload card to be selected.
- Each storage offload card requires selection of 2 QTY (Min/Max=2 per card) of either Q8J73A "100GbE QSFP28 PSM4 500m XCVR" OR Q2F19A "100GbE QSFP28 SR4 100m XCVR" transceivers. Configurator has to default 2 QTY of Q2F19A "100GbE QSFP28 SR4 100m XCVR" per storage offload card selection.
- However, customer is allowed to deselect "100GbE QSFP28 SR4 100m XCVR" and must select Q8J73A "100GbE QSFP28 PSM4 500m XCVR"
- Each storage offload card requires selection of 2 QTY (Min/Max=2 per card) of Q9S71A "HPE 100GbE QSFP28 to QSFP28 5m AOC".
- Configurator to default 2 QTY of "HPE 100GbE QSFP28 to QSFP28 5m AOC" per storage offload card selection.
- PCIe 3.0 x16// HL/ HH
- If above 100GbE Networking PCIe adapter or OCP adapter is selected, Standard Fan Kit cannot be configured.
- If the selected processor(s) is/are in the range of 271W to 250W TDP, and AOC cable is also selected, the ambient temperature would be limit at 25C

### Thermal condition for High Speed Networking Adapter

Networking PCIe adapter beyond 100GbE						
Part number	Qty	Cooling	Up to 4LFF (14W SAS/SATA)	Up to 10SFF (25W NVMe)	Up to 10SFF (10W SAS/SATA)	Up to 8SFF (25NVMe)
P25960-B21 <sup>1</sup> , P10180-B21 <sup>2</sup> , R8M41A <sup>3</sup> ,	3	High Performance Fan Kit, (P48908-B21)	30C	30C	30C	30C
				Up to 2x270W CPU, 32x 128GB DIMMs		





## Core Options

P31324-B21 <sup>4</sup> , P21112-B21 <sup>5</sup> , P23665-B21 <sup>6</sup> , P23666-B21 <sup>7</sup>	3	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	Up to 2x350W CPU, 32x 128GB DIMMs			
			30C	30C with DAC <sup>8</sup> ; 25C with AOC <sup>9</sup>	30C	30C, **30C with DAC, 25C with AOC <sup>3,4</sup>

## Notes:

- <sup>1</sup> Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE
- <sup>2</sup> Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE
- <sup>3</sup> HPE NV60100M 100Gb 2-port Storage Offload Adapter
- <sup>4</sup> HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter
- <sup>5</sup> Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- <sup>6</sup> HPE InfiniBand HDR100/Ethernet 100Gb 1-port QSFP56 PCIe4 x16 MCX653105A-ECAT Adapter
- <sup>7</sup> HPE InfiniBand HDR100/Ethernet 100Gb 2-port QSFP56 PCIe4 x16 MCX653106A-ECAT Adapter
- <sup>8</sup> Direct Attach Copper cable
- <sup>9</sup> Active Optical Cable
- 256GB DIMM cannot be selected if above 100GbE Networking Adapter or OCP Adapter is selected.

## Networking PCIe adapter beyond 100GbE

Part number	Qty	Cooling	Up to 4LFF (14W SAS/SATA)	Up to 10SFF (25W NVMe)	Up to 10SFF (10W SAS/SATA)	Up to 8SFF (25NVMe)
P45641-B21 <sup>1</sup>	3	High Performance Fan Kit, (P48908-B21)	Up to 2x270W CPU, 32x 128GB DIMMs			
		30C	30C with DAC; 27C with AOC	30C	30C	
	3	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	Up to 2x350W CPU, 32x 128GB DIMMs			
		30C	30C with DAC; Not support AOC (<20C)	30C	30C with DAC; 22C with AOC (not a buildable configuration with high hermal risk)	

Notes: <sup>1</sup> HPE InfiniBand NDR 1-port OSFP PCIe5 x16 MCX75310AAS-NEAT Adapter

## Networking OCP adapter beyond 100GbE

Part number	Qty	Cooling	Up to 4LFF (14W SAS/SATA)	Up to 10SFF (25W NVMe)	Up to 10SFF (10W SAS/SATA)	Up to 8SFF (25NVMe)
P31323-B21 <sup>1</sup> P31348-B21 <sup>2</sup>	2	High Performance Fan Kit, (P48908-B21)	Up to 2x270W CPU, 32x 128GB DIMMs			
		30C	30C	30C	30C	
	2	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	Up to 2x350W CPU, 32x 128GB DIMMs			
		30C	30C with DAC; Not support AOC (<20C)	30C	30C with DAC; 25C with AOC	

## Notes:

- <sup>1</sup> HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter





## Core Options

- <sup>2</sup>HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter

Networking OCP adapter 10/25GbE						
Part number	Qty	Cooling	4LFF (14W SAS/SATA)	10SFF (25W NVMe)	10SFF (10W SAS/SATA)	8SFF (25NVMe)
P10115-B21 <sup>1</sup>	2	High Performance Fan Kit, (P48908-B21)	Up to 2x270W CPU, 32x 128GB DIMMs			
			30C	30C	30C	30C
	2	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit, (P48906-B21)	Up to 2x350W CPU, 32x 128GB DIMMs			
			30C	30C with DAC; 25C with AOC	30C	30C

**Notes:**<sup>1</sup> Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

## Power and Cooling

### Power Supplies

Please select one or two power supplies from below.

**Notes:** Mixing of 2 different power supplies is NOT supported.

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

P38995-B21

HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit

P03178-B21

**Notes:** For EMEA Region: Commission Regulation (EU) 2019/424 laying down ecodesign requirements for servers and data-storage products applies from 1 March 2020. A more stringent (compared to the currently applicable values) value for the minimum power efficiency at 96% of PSUs will apply latest from, 1 January 2024, after deferral. For more details, please refer to Lot9 enforcement deferral notice "[European Union law Document 52022XC1209 \(01\)](#)"

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

P38997-B21

**Notes:** Only supports high line voltage (200 VAC to 240 VAC).

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 Gen11 Performance 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.

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: [HPE Power Advisor](#)

HPE ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). Visit [HPE power cords](#) for a full list of optional power cords. The standard 6-foot IEC C-13/C-14 jumper cord (A0K02A) is included with each standard AC power supply option kit. If a different power cord is required, please check the [ProLiant Power Cables](#) web page.

For information on power specifications and technical content visit [HPE Server power supplies](#)



## Core Options

### Power Cooling Options

#### Heatsinks

HPE ProLiant DL3XX Gen11 High Performance Heat Sink Kit

P48905-B21

#### Notes:

- If Processor Wattage is equal to or greater than 186W and less than or equal to 270W, then "Performance Heatsink" and "Performance Fan" must be selected.
- Quantity of Processor and Quantity of Heatsink must match.
- If Liquid Cooling HeatSink is selected, then "High Perf Heat Sink" cannot be selected.

HPE ProLiant DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit

P48906-B21

#### Notes:

- Maximum quantity for LC Heat Sink is one per system.
- If Processor Wattage is more than 185W and less than or equal to 270W, then "Performance Heatsink" and "Performance Fan" must be selected.
- If Processor Wattage is more than 270W, then LC Heat Sink Kit must be selected. This applies to all processor SKUs for DL360 Gen11 including High Bandwidth Memory (HBM) processors.
- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then a 2P configuration must be selected.
- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then any Fans (Standard Fan Kit or High Performance Fan Kit) cannot be selected.
- If Liquid Cooling HeatSink Fan FIO Bundle Kit is selected, then "Standard heat Sink" or "High Perf Heat Sink" cannot be selected.
- The HPE DL360 Gen11 Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle kit is designed as Factory Installation only & is not designated as a Customer Self-Repair (CSR) part to prevent damage to CPUs when customer is conducting the field upgrade on the Liquid Cooling modular itself or CPUs.
- The HPE DL360 Gen11 Closed-loop liquid Cooling Heat Sink Fan FIO Bundle kit contains (2) cold plates (1 per CPU) each with a pump, Tubes, (7) 4028 fans and a radiator. The LC Heat Sink option is designed to cool down the processor effectively using cooled inlet air.
- The water-cooling liquid is not corrosive for human body, but to avoid the risk of connection or damages in a longer term, it is recommended to wash hands after contact. There is no leak detection capability, yet the pumps inside of the system are redundant. If a pump or any of the components inside the solution fail, the CPU temperature or internal server temperature may increase leading to a iLO alert message.
- The HPE DL360 Gen11 Closed-loop liquid Cooling Heat Sink Fan FIO Bundle kit is offered with Standard (3/3/3) Warranty support along with the server. Customers are able to purchase extended support for years (4) and (5).
- This Cooling Solution is subject to a maximum usage (operational) limitation not to exceed (5) years and required to be replaced when this time limit has been reached. HPE recommends replacing the Closed-loop Liquid Cooling solution when it has reached the maximum (5) years of use. Parts and components that Hewlett Packard Enterprise determines have surpassed the standard (3) years warranty\* will not be provided, repaired, or replaced under warranty coverage. Contact your local HPE sales representative for additional information.
- \* Or to the extended (4) or (5) years if warranty contract purchased, and subject to the maximum usage (operation) limitation of (5) years.

#### Fan Kits

HPE ProLiant DL3X0 Gen11 1U High Performance Fan Kit

P48908-B21

#### Notes:

- Includes 7 fans, required by
- Two processors with a TDP equal or greater than 186W and below 270Watt

#### Cooling Option selection in 8+2 SFF and 4LFF CTO Servers

CPU TDP (Watts)	186W – 270W <sup>1</sup>	271W – 350W <sup>1</sup>
CPU Q'ty	2	2

## Core Options

Heatsink	High Performance <sup>2</sup> (P48905-B21)	Closed-loop LC Heatsink and Fan Kit <sup>3</sup> (P48906-B21)
Fans	High Performance <sup>2</sup> (P48908-B21)	
DIMM blanks	Required, embedded, and shipped as default in all CTO Servers	

### Notes:

- <sup>1</sup>Both minimum and maximum limits included (e.g greater or equal to, and up to including).
- <sup>2</sup>Option driven (incl. CPU TDP, DIMM and NIC bandwidth). Options listed below would require Performance Fan kit or Liquid Cooling bundle kit to be implemented.
  - o CPU TDP (as above matrix)
  - o 256GB DIMM
  - o NIC and InfiniBand adapters and OCP cards that go beyond 100GbE/200GbE
  - o With GPU
  - o With OS Boot Device NS204i-u
- <sup>3</sup>Recommended with
- A bundle kit supports at two processors configuration only. The kit incl. two processors heatsink, coldplates, closed-loop liquid cooling tubes, radiator and dedicated 4028 fan sets (7ea) as Factory Installation only kits.
- Below configuration are required to apply.
- Intel Q CPU (6458Q/ 8470Q) at 25C with Closed-loop Liquid cooling solution, and only 8xSATA storage can be supported
  - o 256GB DIMM at 25C
  - o When GPU is selected
  - o When OS Boot Device NS204i-u is selected

## Security Options

### Security Hardware

HPE Bezel Lock Kit 875519-B21

#### Notes:

- Maximum 1 of each can be selected
- If Bezel lock is selected, then "HPE DL3XX Gen11 1U Bezel Kit" or "HPE OEM Gen11 1U Bezel KIT" must be selected.

HPE ProLiant DL3XX Gen11 Intrusion Cable Kit P48922-B21

#### Notes:

- Maximum 1 of each can be selected.
- If "HPE Trusted Supply Chain FIO Config" is selected then "Gen11 Intrusion Cbl Kit" must be selected.
- If HPE Trusted Supply Chain FIO Config is selected, then Configurator should default "Gen11 Intrusion Cbl Kit".

HPE ProLiant DL3X5 Gen11 1U Common Bezel Kit P50450-B21

#### Notes:

- Maximum 1 of each can be selected.
- If Bezel lock is selected, then "HPE DL3XX Gen11 1U Bezel Kit" or "HPE OEM Gen11 1U Bezel KIT" must be selected.
- Both "HPE DL3XX Gen11 1U Bezel Kit" and "HPE OEM Gen11 1U Bezel KIT" cannot be selected together.



## 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

For more information, visit the HPE GreenLake for Compute Ops Management QuickSpecs:

<https://www.hpe.com/psnow/doc/a50004263enw>

#### **Document -HPE GreenLake for Compute Ops Management Getting Started Guide | HPE Support**

Supported Servers – CTO only. No OEM. – Complete list can be found here: Latest Supported Server List:

<https://www.hpe.com/info/com-supported-servers>

## Choose Additional Options

### Accessories

#### Management Hardware

Maximum 1 of each can be selected.

HPE ProLiant DL36X Gen11 Rear Serial Port Cable Kit P48921-B21

HPE ProLiant DL360 Gen11 SFF System Insight Display Power Module Kit P48927-B21

**Notes:** Supported with 8SFF CTO Model only.

HPE ProLiant DL3X0 Gen11 1U LFF Display Port/USB Kit P48928-B21

**Notes:** Supported with 4LFF CTO Model only.



## Core Options

### Manufacturing Services

HPE Remove Standard Power Cords

469774-409

**Notes:** If "Remove Standard IEC-IEC Power Cords" is selected, then the following Warning message should be displayed: By selecting this option, you will not receive standard power cords with this server. Please verify that no power cords are needed for this server prior to proceeding with your order. If "Remove Standard Power Cords" is selected by mistake, then please make sure to de-select it.

### Rack Options

HPE ProLiant DL3XX Gen11 Easy Install Rail 3 Kit

P52341-B21

HPE Easy Install Rail 5 Kit

P52343-B21

HPE ProLiant DL300 Gen10 Plus 1U Cable Management Arm for Rail Kit

P26489-B21

#### Notes:

- HPE rail kits contain telescoping rails which allow for in-rack serviceability.
- 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.
- Maximum 1 of each can be selected.
- If CMA is selected, then Rail kit must be selected.
- <sup>1</sup>Supported with 8SFF CTO Model only.
- <sup>2</sup>Supported with 4LFF CTO Model only.

### Software RAID

Intel Virtual RAID on CPU Premium FIO Software for HPE

R7J57A

#### Notes:

- Intel® VROC Premium
- The Intel® VROC Premium is available for RAID support 0, 1, 5, 10 at the field.
- If Intel® VROC Premium is the primary controller, then the following RAID levels are allowed: 0, 1, 5 (available from RAID FIO settings at HPE factory). Requires selection of NVMe Drives through Direct Attach supported with 8SFF CTO Model only.
- If Intel® RAID is being selected in a configuration with VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.

Intel Virtual RAID on CPU Premium E-RTU for HPE

R7J59AAE

**Notes:** Same as Intel Virtual RAID on CPU Premium FIO Software for HPE (R7J57A), but intended for field deployments.

Intel Virtual RAID on CPU Standard FIO Software for HPE

S0E37A

#### Notes:

- Intel® VROC Standard
- The Intel® VROC Standard is available for RAID support 0, 1, 5 at the field.
- If Intel® VROC Standard is the primary controller, then only following RAID levels are allowed: 0, 1 (available from RAID FIO settings at HPE factory). Requires selection of NVMe Drives through Direct Attach
- Supported with 8SFF CTO Model only.
- If Intel® RAID is being selected in a configuration with VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.

Intel Virtual RAID on CPU Standard E-RTU for HPE

S0E38AAE

**Notes:** Same as Intel Virtual RAID on CPU Standard FIO Software for HPE (S0E37A), but intended for field deployments.



## Core Options

### GPGPU

NVIDIA A2 16GB PCIe Non-CEC Accelerator for HPE

R9H23C

**Notes:** PCIe 4.0

GPGPU Configuration						
Part number	Qty	Cooling	4LFF (14W SAS/SATA)	10SFF (25W NVMe)	10SFF (10W SAS/SATA)	8SFF (25NVMe)
Nvidia A2 (R9H23C) <a href="#">1,2</a>	2	High Performance Fan Kit (P48908-B21)	Up to 2x270W CPU, 32x 128GB DIMMs			
			30C	30C *25C, up to 1x300W CPU, 32x128GB DIMM	30C	30C
	2	Closed-loop Liquid Cooling Heat Sink Fan FIO Bundle Kit (P48906-B21)	Up to 2x350W CPU, 32x 128GB DIMMs			
			25C	N/A <sup>3</sup>	N/A <sup>3</sup>	25C <sup>4</sup>

**Notes:**

- Server system with Nvidia A2 shipment will be available until Q2 2023 (target April)
- Requires increased cooling to be selected in BIOS settings
- There is no Energy Star certification with Graphic cards.
- Can support the GPU apapter with Max. length up to 9.5" (full length adapters are not supported) at PCIe Slot 1 and Slot 3. There is mechinal interference from the GPU bracket when installing A2 at Slot2.
- <sup>1</sup> Requires high performance fans
- <sup>2</sup> Can be installed at Slot 1 and Slot 3 (if 2<sup>nd</sup> processor is selected).
- <sup>3</sup> Max 2x350W CPU, 32x128GB DIMM, and max 10SFF, will need to operated at 20C. Will not be a festible configuration to support.
- <sup>4</sup> If the Graphics Option is selected with the Processor that is more than 270W excluding (8461V and 8471N), then Maximum of 8 NVMe/ SAS drives can be selected.



## Additional Options

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

### Embedded Management

#### HPE iLO Advanced

HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Advanced 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 Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE

### HPE Converged Infrastructure Management Software

#### HPE OneView Advanced (with HPE iLO Advanced)

HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE

#### HPE OneView Advanced (without HPE iLO Advanced)

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

#### Notes:

- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>
- Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
- Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>

### HPE Racks

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

### HPE Power Distribution Units (PDUs)

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



## Core Options

### 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.

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### HPE USB and SD Options

#### Notes:

- In vSphere 7.0, VMware made changes that impact the use of an SD Card/USB media as a standalone boot device and will be removing support for them after version 7.x.
- SD Card/USB media can still be used as a standalone boot option through all 7.x releases via published Customer Advisory [Usage of SD Card/USB Devices As Standalone Boot Devices Has Changed Due to System Storage Changes For VMware ESXi 7.0 \(Or Later\)](#).
- For any major release beyond VMware ESXi 7.x, VMware will require M.2 or another local persistent device as the standalone boot option.

### HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 32GB microSD RAID 1 USB Boot Drive

P21868-B21

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### HPE Tape Backup

HPE StoreEver LTO-9 Ultrium 45000 External Tape Drive

BC042A

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### HPE Support Services

#### Installation & Start-up Services

HPE Install ProLiant DL3xx Service

U4506E

HPE Installation and Startup DL3xx Service

U4507E

#### Tech Care

HPE 3 Year Tech Care Essential DL360 Gen11 HW Service

H93B6E

HPE 3 Year Tech Care Essential wDMR DL360 Gen11 HW Service

H93B7E

HPE 5 Year Tech Care Essential DL360 Gen11 HW Service

H93E0E

HPE 5 Year Tech Care Essential wDMR DL360 Gen11 HW Service

H93E1E

**Notes:** For a full listing of support services available for this server, please visit <http://www.hpe.com/services>.

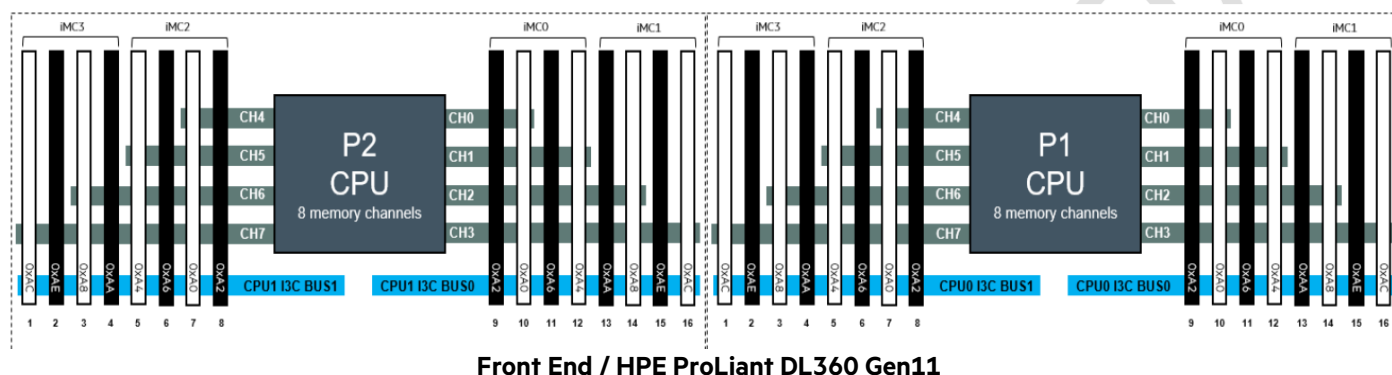
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## Memory

### Memory Population guidelines



#### Notes:

- Listed below are general Memory Module Population Rules supported by the processor for reference.
- There is no longer a need to install DIMMs in pairs in non-RAS modes.
- The same information is displayed alternatively by rank, by speed, or by qty. That is, when viewing by rank, selecting a particular rank will then show the DIMM qty vs DIMM speed tradeoff/combinations. All DIMMs must be either all DDR5 DIMMs or DDR5 and Crow Pass DIMMs.
- There should be at least one DDR5 DIMM per socket.
- When one DIMM is used in a channel, it must be populated in DIMM slot farthest away from the CPU (DIMM slot 0) of a given channel.
- For 16 + 0 configuration with 1R + 2R mixed rank population, on each channel always populated the higher electrical load (2R) in DIMM0 followed by single rank DIMM in DIMM1.
- A maximum of 8 logical ranks (ranks seen by the host) per channel is allowed.
- For a DDR5 DIMM and Crow Pass DIMM in a channel, the DDR5 DIMM must be populated in the farthest DIMM slot (0), while CPS has to be in the nearest slot (1).
- All DIMMs in a Processor socket must have the same number of ranks (unless explicitly specified otherwise).
- x8 DIMMs and x4 DIMMs can not be mixed in the same channel or same Processor socket.
- Mixing of non-3DS and 3DS RDIMMs is not allowed in the same channel, across different channels, and across different sockets.
- 9x4 RDIMMs can not be mixed with another DIMM types (Crow Pass 10x4RDIMMs or Non 9x4 RDIMMs).
- All DDR5 DIMMs must operate at the same speed per Processor socket.
- Rank mixing is not allowed on a channel except for Standard RDIMM 1 Rank + 2 Rank combination, when all 16 DIMMs for a Processor socket is populated.
- Mixing vendor is allowed for RDIMMs, but it is not allowed for 3DS RDIMMS

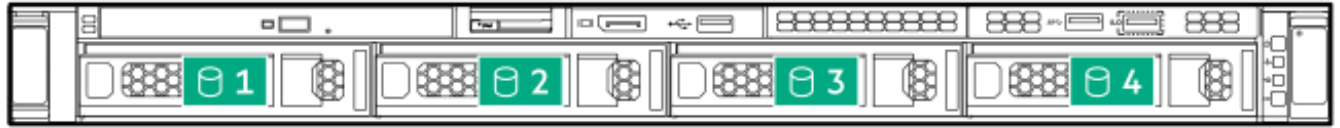
#### General Memory Population Rules and Guidelines

- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two-processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, the number and model of installed processors qualified on the platform.

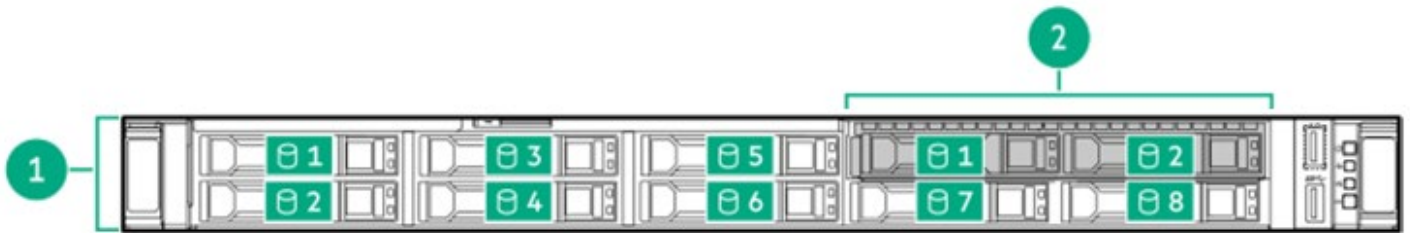
For additional information, please visit the [HPE Memory QuickSpecs and Technical White Papers](#) or [HPE DDR5 SmartMemory QuickSpecs](#).

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

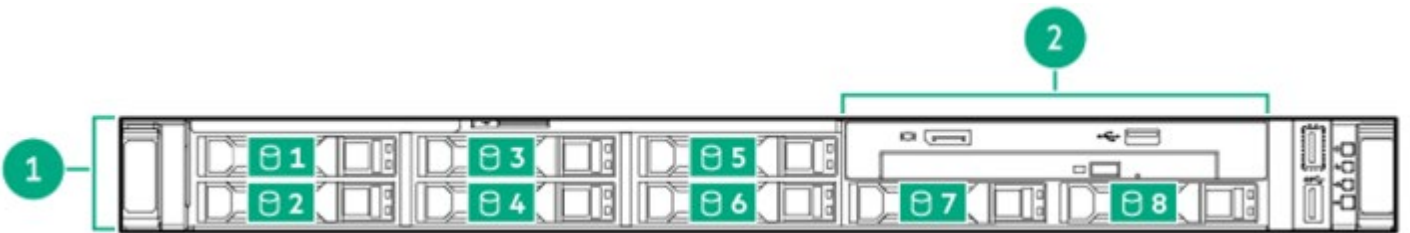
Storage



4 LFF device bay numbering



8 SFF + 2 SFF (optional) device bay numbering



8 SFF+ ODD device bay (optional through Media Bay)

Box	Description
1	Bays 1-8
2	Bays 1 and 2



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## Technical Specifications

### System Unit

**Dimensions** (Height x Width x Depth)

**SFF Drives**

- 4.29 x 43.46 x 75.31 cm  
1.69 x 17.11 x 29.65 in

**LFF Drives**

- 4.29 x 43.46 x 77.31 cm
  - 1.69 x 17.11 x 30.43 in
- 

**Weight** (approximate)

- **14.56 kg (32.1 lb)**
    - **SFF minimum:** One drive, one processor, one power supply, two heatsinks, one Smart Array controller, and five fans.
  - **20.44 kg (45.07 lb)**
    - **SFF maximum:** 10 drives, two processors, two power supplies, two heatsinks, one Smart Array controller and seven fans.
  - **14.95 kg ( 32.96 lb)**
    - **LFF minimum:** one drive, one processor, one power supply, two heatsinks, one Smart Array controller and five fans.
  - **21.58 kg ( 47.58 lb)**
    - **LFF maximum:** Four drives, two processors, two power supplies, two heatsinks, one Smart Array controller and seven fans.
- 

**Input Requirements** (per power supply)

**Rated Line Voltage**

- For 1600W (Platinum): 200-240 VAC
  - For 1000W (Titanium): 100-240 VAC
  - 800W (Platinum): 100-240 VAC
- 

**British Thermal Unit (BTU) Rating**

**Maximum**

- For 1600W (Platinum) Power Supply: 5918 BTU/hr (at 200 VAC), 5888 BTU/hr (at 220 VAC), 5884 BTU/hr (at 240 VAC)
  - For 1000W (Titanium) Power Supply: 3741 BTU/hr (at 100 VAC), 3596 BTU/hr (at 200 VAC), 3582 BTU/hr (at 240 VAC)
  - For 800W (Platinum) Power Supply: 3067 BTU/hr (at 100 VAC), 2958 BTU/hr (at 200 VAC), 2949 BTU/hr (at 240 VAC)
- 



## Technical Specifications

### Power Supply Output (per power supply)

#### Rated Steady-State Power

- For 1600W (Platinum) Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) input for China only
- For 1000W (Titanium) Power Supply: 1000W (at 100 VAC), 1000W (at 240 VAC), 1000W (at 240 VDC) input for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only

#### Maximum Peak Power

- For 1600W (Platinum) Power Supply: 1600W (at 240 VAC), 1600W (at 240 VDC) input for China only
- For 1000W (Titanium) Power Supply: 1000W (at 100 VAC), 1000W (at 240 VAC), 1000W (at 240 VDC) for China only
- For 800W (Platinum) Power Supply: 800W (at 100 VAC), 800W (at 240 VAC), 800W (at 240 VDC) input for China only

**Notes:** For more information, pls visit [HPE Flexible Slot Power Supplies](#)

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### System Inlet Temperature

- **Standard Operating Support**

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) or above 27°C (81°F) at 900M.

10° to 35°C (50° to 95°F) at 900M 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 27°C (81°F) at 900M and 30°C (86°F) at sea level.

The approved hardware configurations for this system are listed at the URL: <http://www.hpe.com/servers/ashrae>

- **Extended Ambient Operating Support**

For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).

For approved hardware configurations, the supported system inlet range is extended to be: 40° to 45°C (104° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft).

The approved hardware configurations for this system require the High Performance Fan Kit (P26477-B21) and 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).

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## Technical Specifications

### Relative Humidity (non-condensing)

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

**Notes:** Configuration with Nvidia A2 GPU would be addressed specifically as below.

- **Operating**  
-12°C DP and 8% Rh to 21°C DP 80% - Relative humidity (Rh), 21°C maximum wet bulb temperature, non-condensing.
- **Non-Operating**  
-12°C DP and 8% Rh to 21°C DP 80% - Relative humidity (Rh), 21°C maximum wet bulb temperature, non-condensing.

### Altitude

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

### Emissions Classification (EMC)

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

[https://support.hpe.com/hpesc/public/docDisplay?docLocale=en\\_US&docId=c03471072](https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072)

### HPE Smart Array

For latest information please refer to the QuickSpecs.

- [HPE Compute MR Gen11 Controllers Quick Spec](#)
- [HPE Compute SR Gen11 Controllers Quick Spec](#)

### Acoustic Noise

Listed are the declared mean A-Weighted sound power levels (LWA,m), 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.

Test case	1	2	3	4	5	6	7	8
<b>Idle</b>								
LWA,m	5.1 B	4.7 B	4.7 B	5.0 B	4.7 B	4.7 B	4.7 B	5.2 B
LpAm	37 dBA	35 dBA	36 dBA	37 dBA	36 dBA	36 dBA	36 dBA	38 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B
<b>Operating</b>								
LW,m	5.3 B	5.0 B	5.2 B	5.3 B	5.1 B	5.4 B	5.5 B	6.0 B
LpAm	40 dBA	37 dBA	39 dBA	41 dBA	37 dBA	41 dBA	41 dBA	49 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B	0.4 B



## Technical Specifications

### Notes:

- Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.
- The declared mean A-weighted sound power level, LWA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample, rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance, when using the verification procedures of ISO 9296, if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m and Kv.
- All measurements made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- System under abnormal conditions may increase the noise level, persons in the vicinity of the product [cabinet] for extended periods of time should consider wearing hearing protection or using other means to reduce noise exposure.

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### 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.

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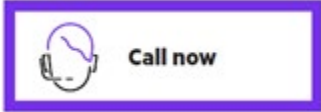
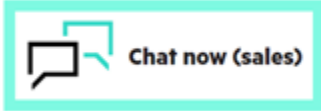
## Summary of Changes

Date	Version History	Action	Description of Change
06-Mar-2023	Version 3	Changed	Standard features, Configuration Information and Core Options were updated.
06-Feb-2023	Version 2	Changed	Overview, Standard Features, Optional Features, Service Supports, Configuration Information, Core Options, Additional Options and Technical Specifications were updated.
10-Jan-2023	Version 1	New	New QuickSpecs.



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