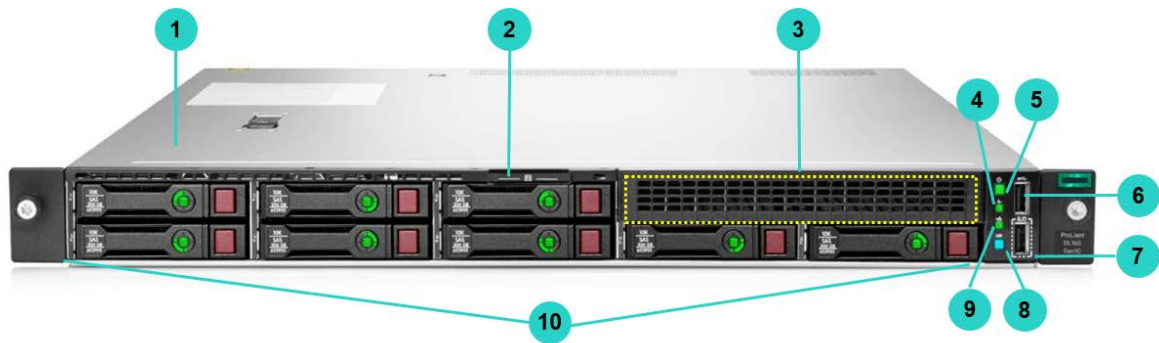


Overview

HPE ProLiant DL160 Gen10 Server

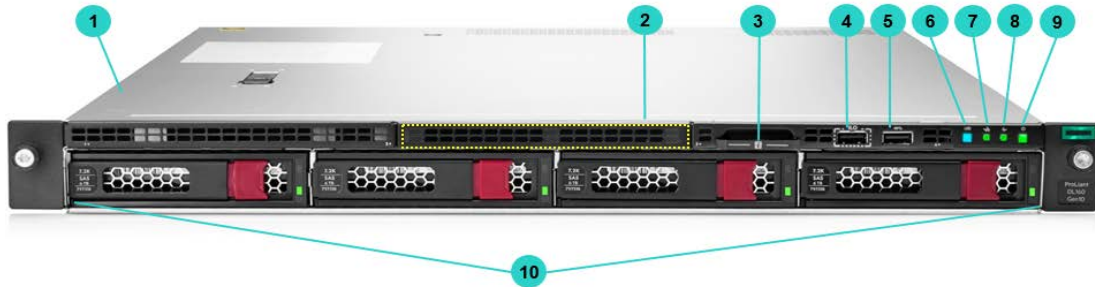
The secure 2P 1U HPE ProLiant DL160 Gen10 server delivers the right balance of performance, storage, reliability, manageability and efficiency in a dense and compact chassis, to meet the needs of growing businesses of a diverse set of customers – from SMB to Service Providers running wide range of workloads - at a compelling price point.



8 SFF chassis - Front View

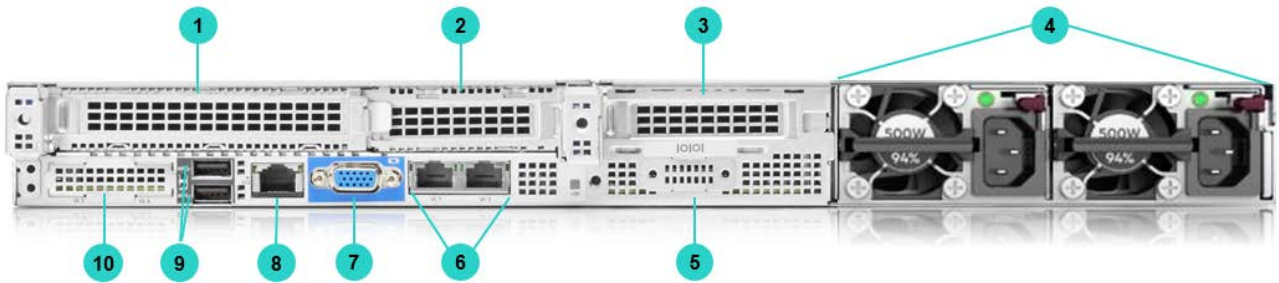
- | | |
|------------------------------------------------------|----------------------------------------|
| 1. Quick removal access panel | 6. USB 3.0 port |
| 2. Serial no. label pull tab | 7. iLO Service Port |
| 3. Optional: Media Bay (blank shown) | 8. UID button/LED |
| a. Optional: +2SFF SAS/SATA (total max 10SFF) | |
| b. Optional: DVD-RW or DVD-ROM | |
| 4. Health LED | 9. NIC Status LED |
| 5. Power On/Standby button and system power LED | 10. Standard 8 SFF SAS/SATA drive bays |

Overview



4 LFF chassis - Front View

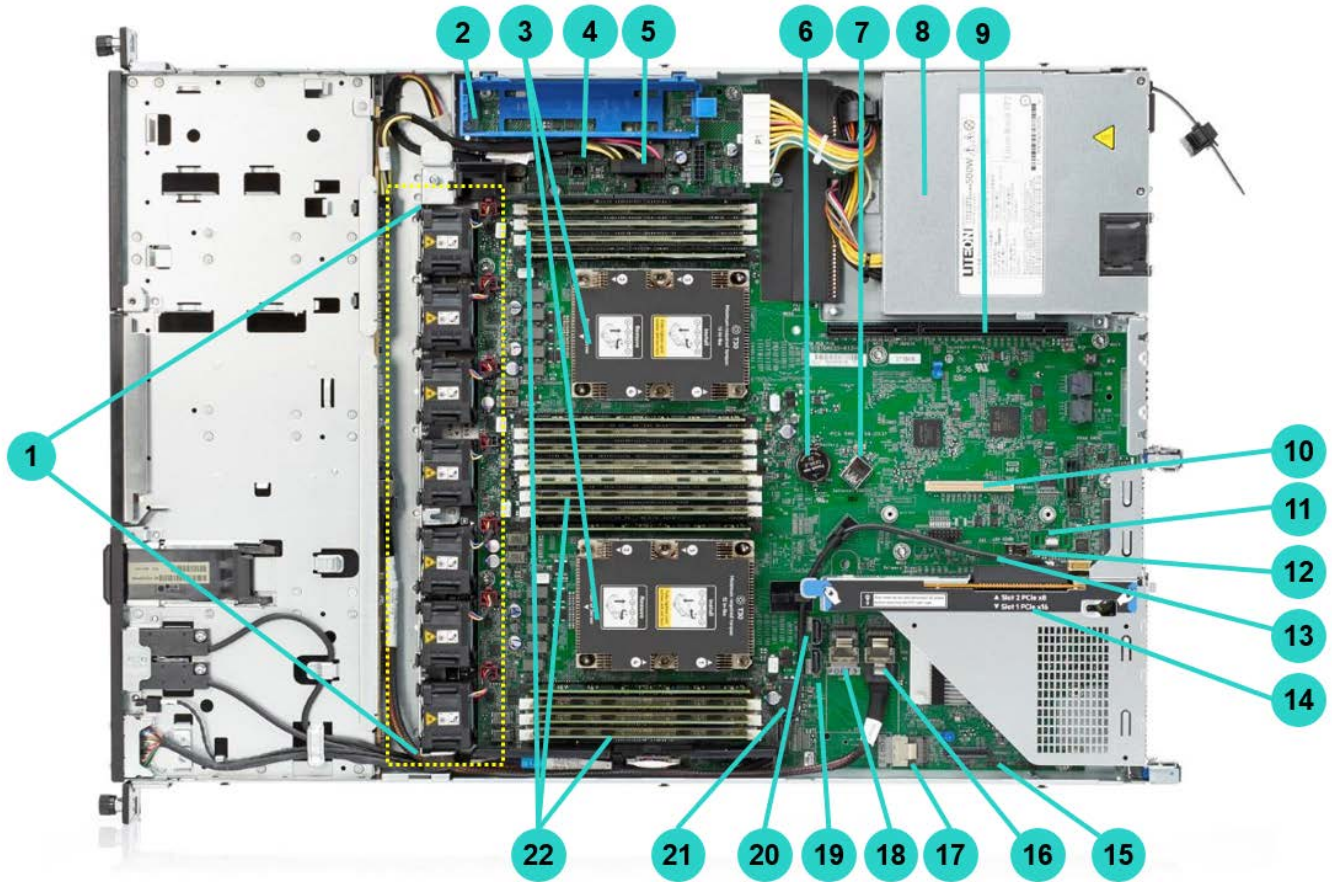
- | | |
|-----------------------------------------------------|-------------------------------------------------|
| 1. Quick removal access panel | 6. UID button/LED |
| 2. Optional: DVD-RW or DVD-ROM (blank shown) | 7. NIC status LED |
| 3. Serial no. label pull tab | 8. Health LED |
| 4. iLO Service Port | 9. Power On/Standby button and system power LED |
| 5. USB 3.0 Port | 10. 4 LFF SAS/SATA drive bays |



Rear View

- | | |
|--------------------------------------------------------------|-----------------------------------|
| 1. Slot 1 PCIe 3.0 | 6. Embedded 2x 1GbE Adapter |
| 2. Slot 2 PCIe 3.0 | 7. VGA Port |
| 3. Optional: Slot 3 PCIe 3.0 (Requires 2nd processor) | 8. iLO Management Port |
| 4. Power Supply (Redundant hot-plug shown) | 9. 2x USB 3.0 Ports |
| 5. Optional: Serial Port | 10. Optional: Media Module |

Overview



8SFF chassis – with optional 2nd CPU - Internal View

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 1. Standard single rotor hot swap fans
1 CPU – 3 standard fans
Optional: 2 CPUs – 6 standard fans (1 redundant fan shown) | 12. MicroSD card slot |
| 2. Optional: Smart Storage Battery (No battery shown) | 13. iLO Service Port Connector |
| 3. Up to 2 processors (shown with standard heat sinks) | 14. Standard: 1x16 and 1x8
Optional: FlexibleLOM (1x8 FlexibleLOM, 1x8 Low Profile) |
| 4. Optional: Chassis Intrusion Detection connector | 15. Media Module Connector |
| 5. Hard Drive backplane power connector | 16. Mini-SAS port 1 |
| 6. System Battery | 17. Mini-SAS port 2 |
| 7. Internal USB 3.0 connector | 18. Mini-SAS port 3 |
| 8. Power supply (non-redundant power supply shown) | 19. SATA port 4 |
| 9. Secondary (CPU2) PCIe 3.0 riser | 20. SATA port 5 |
| 10. Flexible Smart Array Controller Connector | 21. Front Power USB 3.0 connector |
| 11. Optional: TPM 2.0 | 22. DDR4 DIMM slots
(Fully populated 16 DIMMs shown) |

Overview

What's New

- 2nd generation Intel® Xeon® Scalable Processor Family
- Pre-Configured servers with 2nd Generation Intel® Xeon® Scalable Processors
- Factory Integrated models (CTO) for select customers
- 8-64GB 2933 MT/s memory DIMMs
- Increased storage capacity with support for up to 10 SAS/SATA SFF drives
- SATA M.2 options
- Expansion of Drive options (up to 12TB HDD and up to 3.84TB SSD)
- Three optional Media Module Adapters to choose from that provide a cost effective upgrade to 2x1GbE, 2x10GbE SFP+ or 2x10GbE Base-T networks.
- 800W Power Supply options (up to Titanium)
- Security features: TPM 2.0, Chassis Intrusion Detection, Bezel Lock

Platform Information

Form Factor

1U rack

Chassis Types

- 8 SFF with optional support for additional 2 SFF SAS/SATA HDD/SSD
 - 4 LFF
-

System Fans

Single rotor hot plug fans will be included

For 4 LFF and 8 SFF chassis:

- 1 CPU – Includes 3 standard fans, 4 fans with addition of redundant fan kit
- 2 CPUs – Includes 6 standard fans, 7 fans with addition of redundant fan kit

NOTE: Optional redundant fan kit (866438-B21) includes 1 fan for redundancy

Standard Features

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

NOTE: The 2nd digit of the processor model number “x1xx” and “x2xx” is used to denote the processor generation (i.e. 1=1st generation and 2=2nd generation)

NOTE: “U” processors (i.e. 6212U) only supported in single socket configurations

NOTE: This table covers the public Intel offering only.

NOTE: For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

2 nd Generation Intel® Xeon® Scalable Processor Family							
Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Platinum 8256 Processor	3.8 GHz	4	16.50 MB	105W	3 @ 10.4 GT/s	2933 MT/s	1TB
Platinum 8253 Processor	2.2 GHz	16	22.00 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1TB

NOTES:

- 6-Channel DDR4 @ 2933 MT/s.
- 2TB max RAM
- Support for: Vector Neural Network Instructions (VNNI) for inference acceleration.
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, advanced RAS

2 nd Generation Intel® Xeon® Scalable Processor Family							
Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Gold 6252 Processor	2.1 GHz	24	35.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6248 Processor	2.5 GHz	20	27.5 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6244 Processor	3.6 GHz	8	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6242 Processor	2.8 GHz	16	22 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6240 Processor	2.6 GHz	18	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6238 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6234 Processor	3.3 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6230 Processor	2.1 GHz	20	27.5 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6226 Processor	2.7 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1TB
Gold 6210U Processor	2.5 GHz	20	27.50 MB	150W	N/A	2933 MT/s	1TB
Gold 6209U Processor	2.1 GHz	20	27.50 MB	125W	N/A	2933 MT/s	1TB
Gold 5222 Processor	3.8 GHz	4	16.5 MB	105W	2 @ 10.4 GT/s	2933 MT/s	1TB
Gold 5220 Processor	2.2 GHz	18	24.75 MB	125W	2 @ 10.4 GT/s	2666 MT/s	1TB
Gold 5218 Processor	2.3 GHz	16	22 MB	125W	2 @ 10.4 GT/s	2666 MT/s	1TB
Gold 5217 Processor	3.0 GHz	8	11 MB	115W	2 @ 10.4 GT/s	2666 MT/s	1TB
Gold 5215 Processor	2.5 GHz	10	13.75 MB	85W	2 @ 10.4 GT/s	2666 MT/s	1TB

NOTES:

- 6-Channel DDR4 @ 2933 MT/s (Gold 6200 & 5222 skus only), 2666 MT/s on all Gold 5200 skus (except 5222 @ 2933 MT/s).
- 2TB max RAM
- Support for: Vector Neural Network Instructions (VNNI) for inference acceleration.
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 10.4 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, advanced RAS

Standard Features

2nd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Silver 4216 Processor	2.1 GHz	16	22 MB	100W	2 @ 9.6 GT/s	2400 MT/s	1TB
Silver 4215 Processor	2.5 GHz	8	11 MB	85W	2 @ 9.6 GT/s	2400 MT/s	1TB
Silver 4214 Processor	2.2 GHz	12	16.5 MB	85W	2 @ 9.6 GT/s	2400 MT/s	1TB
Silver 4210 Processor	2.2 GHz	10	13.75 MB	85W	2 @ 9.6 GT/s	2400 MT/s	1TB
Silver 4208 Processor	2.1 GHz	8	11 MB	85W	2 @ 9.6 GT/s	2400 MT/s	1TB

NOTES:

- 6-Channel DDR4 @ 2400 MT/s.
- 2TB max RAM
- Support for: Intel® Vector Neural Network Instructions (VNNI) for inference acceleration.
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 9.6 GT/s.
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, standard RAS

1st Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Silver 4110 Processor	2.1 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2400 MT/s	768GB

NOTES:

- 6-Channel DDR4 @ 2400 MT/s providing up to 1.5TB max RAM
- 2 Socket supports 2UPI @ 9.6 GT/s
- Intel Turbo Boost Technology, Intel Hyper-Threading Technology, Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.

2nd Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Bronze 3204 Processor	1.9 GHz	6	8.25 MB	85W	2 @ 9.6 GT/s	2133 MT/s	1 TB

NOTES:

- 6-Channel DDR4 @ 2133 MT/s.
- 2TB max RAM
- Support for: Intel® Vector Neural Network Instructions (VNNI) for inference acceleration..
- 2 and 4 socket capable, 2S - 2UPI, 2S - 3UPI, 4S - 3UPI @ 9.6 GT/s.
- Intel AVX-512 (2x 512-bit FMA).
- 48 lanes PCIe 3.0, standard RAS

1st Generation Intel® Xeon® Scalable Processor Family

Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4	Memory per socket
Bronze 3106 Processor	1.7 GHz	8	11.00 MB	85W	2 @ 9.6 GT/s	2133 MT/s	768GB

NOTES:

- 6-Channel DDR4 @ 2133 MT/s providing up to 1.5TB max RAM
- 2 Socket supports 2UPI @ 9.6 GT/s
- Intel AVX-512(1x 512-bit FMA), 48 lanes PCIe 3.0, standard RAS supported.

Standard Features

Chipset

Intel C622 Chipset

NOTE: For more information regarding Intel® chipsets, please see the following

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

On System Management Chipset

HPE iLO 5 ASIC

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

Memory

HPE DDR4 SmartMemory

Type

Registered (RDIMM), Load Reduced (LRDIMM)

DIMM Slots Available	16	8 DIMM slots per processor, 6 channels per processor, 2 channels @ 2 DIMMs per channel, 4 channels @ 1 DIMM per channel
Maximum capacity (LRDIMM)	1.0 TB	16 x 64 GB LRDIMM @ 2933 MT/s
Maximum capacity (RDIMM)	1.0 TB	16 x 64 GB RDIMM @ 2933 MT/s

NOTE: Mixing of RDIMM and LRDIMM memory is not supported.

NOTE: For General Server Memory Population Rules and Guidelines for Gen10 see details here:

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

Memory Protection

Advanced ECC

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

Online Spare

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

NOTE: For more information see our [Memory RAS feature technical whitepaper](#)

Expansion Slots

Primary Riser

Expansion Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor
1	PCIe 3.0	x16	x16	CPU1	Full-height, half-length slot
2	PCIe 3.0	x8	x8	CPU1	Low Profile

FlexibleLOM Riser

Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor
1	PCIe 3.0	X8	X8	CPU1	Flexible LOM
2	PCIe 3.0	X8	X8	CPU1	Half-height, half-length slot

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

NOTE: This riser is mandatory for installing FlexibleLOMs.

NOTE: FlexibleLOM riser will replace standard CPU1 X16/X8 riser.

Standard Features

CPU2 Riser

Slots #	Technology	Bus Width	Connector Width	Processor	Slot Form Factor
1	PCIe 3.0	X16	X16	CPU2	Half-height, half-length slot

NOTE: Bus Width Indicates the number of physical electrical lanes running to the connector.

NOTE: When populating the second optional riser slot, the second processor must be installed.

NOTE: Cannot be installed if type-a modular smart array controller is installed.

NOTE: Max 3-PCIe slots are available on the DL160-Gen10.

Software RAID

HPE Smart Array S100i SR Gen10 SW RAID

NOTE: HPE Smart Array S100i SR Gen10 SW RAID will operate in UEFI mode only. For legacy support an additional controller will be needed.

NOTE: HPE Smart Array S100i SR Gen10 SW RAID is off by default and must be enabled.

NOTE: HPE Smart Array S100i SR Gen10 SW RAID only supports Windows and does not support Linux. For Linux users, HPE offers a solution that uses in-distro open-source software to create a two-disk RAID 1 boot volume. For more information visit: <https://downloads.linux.hpe.com/SDR/project/lsrrb/>

Essential RAID Controller

- HPE Smart Array E208i-a SR G10 LH Controller
- HPE Smart Array E208i-p SR Gen10 Controller
- HPE Smart Array E208e-p SR Gen10 Controller

Performance RAID Controller

- HPE Smart Array P408i-a SR G10 LH Controller
- HPE Smart Array P408i-p SR Gen10 Controller
- HPE Smart Array P408e-p SR Gen10 Controller

NOTE: Performance RAID Controllers require the HPE Smart Storage Battery (P01366-B21) which is sold separately.

NOTE: For additional details, please see [HPE Smart Array Gen10 Controllers Data Sheet](#)

Internal Storage Devices

Optical Drive

Optional: DVD-ROM or DVD-RW

Hard Drives

None ship standard

Maximum Internal Storage		
	Capacity	Configuration
Hot Plug SFF SAS HDD	19.2 TB	8 X 2.4 TB
Hot Plug LFF SAS HDD	48 TB	4 X 12 TB
Hot Plug SFF SATA HDD	16 TB	8 X 2 TB
Hot Plug LFF SATA HDD	48 TB	4 X 12 TB
Hot Plug SFF SAS SSD	30.7 TB	8 X 3.84 TB
Hot Plug SFF SATA SSD	30.7 TB	8 X 3.84 TB
Hot Plug LFF SATA SSD	7.68 TB	4 X 1.92 TB

Standard Features

Power Supply

- HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
NOTE: Available in 94% efficiency.
- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
NOTE: Available in 94% and 96% efficiency.
NOTE: Also available in -48VDC power input.

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 Gen10 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. For information on power specifications and technical content visit [HPE Server power supplies](#).

Interfaces

- **Video**
 - 1 rear – VGA Port (standard), 1 Serial Port (optional)
- **Network Ports**
 - 2 x 1 GbE ports embedded on board with optional Media Module, FlexibleLOM or stand up card
- **HPE iLO Remote Management Network Port**
 - 1 Gb Dedicated
- **Front iLO Service Port**
 - 1 standard
- **Micro SD Slot**
 - 1 Micro SD

NOTE: The Micro SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
- **USB 3.0**
 - Up to 4 total: 1 front, 2 rear, 1 internal

Operating Systems and Virtualization Software Support for ProLiant Servers

- Windows Server 2016**
- Windows Server 2019**
- VMware ESXi 6.5 U3**
- VMware ESXi 6.7 U3**
- Red Hat Enterprise Linux (RHEL) 7.6 (with Kbase)**
- SUSE Linux Enterprise Server (SLES) 12 SP4**
- SUSE Linux Enterprise Server (SLES) 15 SP1**

NOTE:**Certified

Standard Features

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant (internal)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API
- IPMI 2.0
- Secure Digital 2.0
- Advanced Encryption Standard (AES)
- Triple Data Encryption Standard (3DES)
- SNMP v3
- TLS 1.2
- DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
- Active Directory v1.0
- ASHRAE A3/A4

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

- UEFI (Unified Extensible Firmware Interface Forum)

NOTE: UEFI is the default for the HPE ProLiant DL160 Gen10. Legacy mode can be selected in the field.

Graphics

Integrated Video Standard

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

HPE iLO 5 on system management memory

- 32 MB Flash
 - 4 Gbit DDR 3 with ECC protection
-

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
 - Tamper-free updates – components digitally signed and verified
 - Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
 - Ability to rollback firmware
 - Secure erase of NAND/User data
 - TPM (Trusted Platform Module) 2.0 option
 - Bezel Locking Kit
 - Chassis Intrusion detection option
-

Standard Features

HPE Server UEFI/Legacy ROM

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 Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS Mode.

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

- UEFI enables numerous new capabilities specific to HPE ProLiant servers such as:
- Secure Boot and Secure Start enable for enhanced security
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- PXE boot support for IPv6 networks
- Workload Profiles for simple performance optimization
- UEFI Boot Mode only:
- NVMe Boot Support
- iSCSI Software Initiator Support.
- HTTP/HTTPS Boot support as a PXE alternative.
- Boot support for option cards that only support a UEFI option ROM

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

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 1 or more servers with Intelligent Provisioning.

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

iLO RESTful API

iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at <http://www.hpe.com/info/restfulapi>.

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>.

Standard Features

Service Pack for ProLiant (SPP)

The Service Pack for ProLiant (SPP) is a comprehensive collection of server firmware, drivers, and system software tested as a single solution stack, which is delivered as a single ISO image. Learn more at <http://www.hpe.com/servers/spp>

iLO Amplifier Pack

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

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 or <http://www.hpe.com/servers/powershell>.

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>.

Warranty

This product is covered by a global limited warranty and supported by Hewlett Packard Enterprise 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.

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

<http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/>.

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. Learn more about HPE iLO Advanced at <http://www.hpe.com/servers/iloadvanced>.

HPE OneView Advanced

HPE OneView brings a new 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 Gen8, Gen9 and Gen10 servers. 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>.

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](#).

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#>

Service and Support

HPE Pointnext - Service and Support

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. Hewlett Packard Enterprise is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Connect your devices:

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%¹ reduction in down time, near 100%² diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.

NOTE:¹ IDC

NOTE:² HPE CSC reports 2014 – 2015

Learn more about getting connected at <http://www.hpe.com/services/getconnected>

Recommended Services

HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years' proactive reporting and advice with our highest level of hardware support - HPE's 24x7, six hour hardware call-to-repair. HPE is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

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

HPE Proactive Care* with 24x7 coverage, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This Service combines three years proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

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

HPE Proactive Care* - Next Business Day service, three year Support Service

HPE Proactive Care gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice. This service combines three years of Hardware Support where an HPE authorized representative will arrive at the Customer's site during the onsite coverage window to begin hardware maintenance service the next coverage day after the service request has been logged. This service also includes collaborative software support for Independent Software Vendors (ISVs), (Red Hat, VMWare, Microsoft, etc.) running on your HPE servers.

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

NOTE: *HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

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://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf>

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 includes the installation of one supported operating system type (Windows® or Linux).

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services “building blocks.” You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others’ products. For more information, visit

<http://www.hpe.com/services/datacentercare>

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.hpe.com/ww/learn>

Parts and Materials

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

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

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

Service and Support

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 Hewlett Packard Enterprise experts, access support resources or collaborate with peers.

Learn more <http://www.hpe.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.

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

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

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

Pre-Configured Models

Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.

Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

Powered by 2nd Generation Intel Xeon Processors			
SKU Number	P19559-B21	P19561-B21	P19560-B21
Model Name	HPE ProLiant DL160 Gen10 3204 1.9GHz 6-core 1P 16GB-R 4LFF 500W PS	HPE ProLiant DL160 Gen10 4208 2.1GHz 8-core 1P 16GB-R 4LFF 500W PS	HPE ProLiant DL160 Gen10 4208 2.1GHz 8-core 1P 16GB-R 8SFF 500W PS
Chassis	4LFF	4LFF	8SFF
Processor	3204 (1.9GHz/6-core/85W)	4208 (2.1GHz/8-core/85W)	4208 (2.1GHz/8-core/85W)
Number of Processors	One processor With standard heatsink	One processor With standard heatsink	One processor With standard heatsink
Memory	16 GB RDIMM 1R 2933 MT/s (1x 16 GB) NOTE: Runs at 2133 MT/s due to processor limitation	16 GB RDIMM 1R 2933 MT/s (1x 16 GB) NOTE: Runs at 2400 MT/s due to processor limitation.	16 GB RDIMM 1R 2933 MT/s (1x 16 GB) NOTE: Runs at 2400 MT/s due to processor limitation.
Network Controller	Embedded 2-port 1GbE	Embedded 2-port 1GbE	Embedded 2-port 1GbE
Storage Controller	Embedded 14-port S100i NOTE: SATA only.	Embedded 14-port S100i NOTE: SATA only.	Embedded 14-port S100i NOTE: SATA only.
Hard Drive	None included	None included	None included
Optical Drive	None included	None included	None included
PCIe Slots	2 PCIe: 1 x16 FH / 1 x8 LP	2 PCIe: 1 x16 FH / 1 x8 LP	2 PCIe: 1 x16 FH / 1 x8 LP
Power Supply	1x 500W Hot Plug; RPS ready	1x 500W Hot Plug; RPS ready	1x 500W Hot Plug; RPS ready
Fans	3 - Standard	3 - Standard	3 - Standard
Management	HPE iLO 5	HPE iLO 5	HPE iLO 5
Rail Kit	1U Easy Install	1U Easy Install	1U Easy Install
Energy Star	Energy Star 2.1		
Form Factor	1U Rack		
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.		

NOTE: UEFI is the standard default for all Pre-configured models.

Pre-Configured Models

Powered by 1 st Generation Intel Xeon Processors		
SKU Number	878968-B21	878970-B21
Model Name	HPE ProLiant DL160 Gen10 3106 1.7GHz 8-core 1P 16GB-R S100i 4LFF 1x500W PS Server	HPE ProLiant DL160 Gen10 4110 2.1GHz 8-core 1P 16GB-R S100i 8SFF 1x500W PS Server
Chassis	4LFF	8SFF
Processor	3106 (1.7GHz/8-core/85W)	4110 (2.1GHz/8-core/85W)
Number of Processors	One processor With standard heatsink	One processor With standard heatsink
Memory	16 GB RDIMM 1R 2666 MT/s (1x 16 GB) NOTE: Runs at 2133 MT/s due to processor limitation	16 GB RDIMM 1R 2666 MT/s (1x 16 GB) NOTE: Runs at 2400 MT/s due to processor limitation.
Network Controller	Embedded 2-port 1GbE	Embedded 2-port 1GbE
Storage Controller	Embedded 14-port S100i NOTE: SATA only.	Embedded 14-port S100i NOTE: SATA only.
Hard Drive	None included	None included
Optical Drive	None included	None included
PCIe Slots	2 PCIe: 1 x16 FH / 1 x8 LP	2 PCIe: 1 x16 FH / 1 x8 LP
Power Supply	1x 500W Hot Plug; RPS ready	1x 500W Hot Plug; RPS ready
Fans	3 - Standard	3 - Standard
Management	HPE iLO 5	HPE iLO 5
Rail Kit	1U Easy Install	1U Easy Install
Energy Star	Energy Star 2.1	
Form Factor	1U Rack	
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.	

NOTE: UEFI is the standard default for all Pre-configured models.

NOTE: Factory Integrated Models are only available to select customers

Configuration Information

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.

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

Step 1: Base Configuration (choose one of the following configurable models)		
CTO Server	HPE ProLiant DL160 Gen10 4 LFF CTO Server	HPE ProLiant DL160 Gen10 8 SFF CTO Server
SKU Number	878972-B21	878973-B21
Processor	Not included as standard	
DIMM Slots	16-DIMM slots	
Storage Controller	Embedded SW RAID with 14 SATA ports, choice of HPE modular Smart Array and PCIe plug-in controller	
PCIe	None Standard. Risers need to be added	
Drive Cage - included	4 LFF SAS/SATA	8 SFF SAS/SATA
Network Controller	Embedded 2x1GbE with optional, Media Module, HPE FlexibleLOM on riser and optional Standup card	
Fans	1 CPU- 3 Standard Fans 2 CPU- 6 Standard Fans	
Management	HPE iLO with Intelligent Provisioning (standard), iLO Advanced and OneView (optional)	
USB	Front: 1 USB 3.0 + iLO service port Rear: 2 USB 3.0 Internal: 2 USB 3.0	

Step 2a: Choose Processor Options

Please select one –L21 processor required below.

For second processor, please select the same processor model with –B21 from Core Options – HPE Processors section.

For example: first processor, select 878947-L21 then for second processor, select 878947-B21.

NOTE: Mixing of 2 different processor models is not supported.

NOTE: For first processor, -L21 will include 3 fans, For second processor, -B21 will add 3 additional fans

NOTE: When 2nd Generation Intel Xeon Scalable Processor is selected, then only DDR4-2933 Memory Kit can be selected; When 1st Generation Intel Xeon Scalable Processor is selected, then only DDR4-2666 Memory Kit can be selected

Processor Option Kits (Required Processor)

SKU

2nd Generation Intel Xeon- Platinum

HPE DL160 Gen10 Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) FIO Processor Kit P12005-L21

HPE DL160 Gen10 Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) FIO Processor Kit P12004-L21

2nd Generation Intel Xeon-Gold

HPE DL160 Gen10 Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) FIO Processor Kit P11139-L21

HPE DL160 Gen10 Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) FIO Processor Kit P11138-L21

HPE DL160 Gen10 Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) FIO Processor Kit P11137-L21

HPE DL160 Gen10 Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) FIO Processor Kit P11136-L21

Configuration Information

2nd Generation Intel Xeon-Gold

HPE DL160 Gen10 Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) FIO Processor Kit	P11135-L21
HPE DL160 Gen10 Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) FIO Processor Kit	P11145-L21
HPE DL160 Gen10 Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) FIO Processor Kit	P11144-L21
HPE DL160 Gen10 Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) FIO Processor Kit	P11134-L21
HPE DL160 Gen10 Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) FIO Processor Kit	P11143-L21
HPE DL160 Gen10 Intel Xeon-Gold 6210U (2.5GHz/20-core/150W) FIO Processor Kit	P11141-L21
HPE DL160 Gen10 Intel Xeon-Gold 6209U (2.1GHz/20-core/125W) FIO Processor Kit	P11140-L21
HPE DL160 Gen10 Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) FIO Processor Kit	P11142-L21
HPE DL160 Gen10 Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) FIO Processor Kit	P11133-L21
HPE DL160 Gen10 Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) FIO Processor Kit	P11132-L21
HPE DL160 Gen10 Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) FIO Processor Kit	P11131-L21
HPE DL160 Gen10 Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) FIO Processor Kit	P11130-L21

2nd Generation Intel Xeon- Silver

HPE DL160 Gen10 Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) FIO Processor Kit	P11129-L21
HPE DL160 Gen10 Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) FIO Processor Kit	P11128-L21
HPE DL160 Gen10 Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) FIO Processor Kit	P11127-L21
HPE DL160 Gen10 Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) FIO Processor Kit	P11126-L21
HPE DL160 Gen10 Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) FIO Processor Kit	P11125-L21

1st Generation Intel Xeon-Silver

HPE DL160 Gen10 Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) FIO Processor Kit	878947-L21
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2nd Generation Intel Xeon- Bronze

HPE DL160 Gen10 Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) FIO Processor Kit	P11124-L21
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1st Generation Intel Xeon- Bronze

HPE DL160 Gen10 Intel Xeon-Bronze 3106 (1.7GHz/8-core/85W) FIO Processor Kit	878945-L21
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Step 2b: Choose Memory Options

Please select one or more memory from below.

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

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

For Gen10 memory speed table, please go to: <https://www.hpe.com/docs/memory-speed-table>

For memory Reliability, Accessibility, Serviceability (RAS) features whitepaper like Gen10 Fast Fault Tolerance and legacy mirrored memory feature etc. please go to: <http://www.hpe.com/docs/memory-ras-feature>.

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

NOTE: DDR4-2933 Memory Kits are only supported with 2nd Generation Intel Xeon Scalable Series Processors and DDR4-2666 Memory Kits are only supported with 1st Generation Intel Xeon Scalable Series Processors.

Registered DIMMs (RDIMMs) for 2nd Generation Intel Xeon Scalable Series

HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-B21

Registered DIMMs (RDIMMs) for 1st Generation Intel Xeon Scalable Series

HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21
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Configuration Information

Load Reduced DIMMs (LRDIMMs) for 2nd Generation Intel Xeon Scalable Series

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit P00926-B21

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

Step 2c: Choose Power Supplies

Please select one or two power supplies from below.

NOTE: Mixing of 2 different power supplies is NOT supported.

NOTE: HPE DL160/180 Gen10 Redundant Power Supply Enablement Kit (866442-B21) required with selection of power supply.

HPE Flex Slot Power Supplies

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit	865438-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865414-B21
HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit	865434-B21
HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit	865428-B21
HPE DL160/180 Gen10 Redundant Power Supply Enablement Kit	866442-B21

NOTE: This enablement kit is required with the selection of a Flex Slot power supply

Step 3: Choose Additional (FIO) Factory Integratable Options

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

HPE Legacy FIO Mode Setting	758959-B22
HPE FIO Enable Smart Array SW RAID	784308-B21
HPE Gen10 TPM 1.2 FIO Setting	872108-B21

HPE Unique Options

HPE DL160 Gen10 FIO Quick Release Ear Kit	872987-B21
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NOTE: This option kit is required for adding Bezel.

HPE 1U Gen10 4LFF Embedded SATA Controller FIO Cable Kit	866444-B21
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NOTE: This option is used to connect the 4LFF chassis to Smart Array S100i controller

HPE DL160/120 Gen10 8SFF Smart Array S100i SATA FIO Cable Kit	866446-B21
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NOTE: This option is used to connect the 8SFF chassis to Smart Array S100i controller

HPE 1U Gen10 2SFF SAS/SATA FIO Enablement Kit without Cables	881179-B21
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NOTE: This option kit will enable the additional 2SFF drive in an 8SFF Chassis

NOTE: This is a Factory integratable option only

NOTE: This kit does not contain any cables. You would need to choose either the SATA (881181-B21) or the SAS (881183-B21) Cable kit along with this

HPE DL160/120 Gen10 2SFF Smart Array S100i SATA FIO Cable Kit	881181-B21
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NOTE: This option kit is required to connect the 2SFF FIO Enablement Kit (881179-B21) to the Smart Array S100i Controller

HPE DL160/120 Gen10 2SFF Smart Array SAS FIO Cable Kit	881183-B21
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NOTE: This option kit is required to connect the 2SFF FIO Enablement Kit (881179-B21) to Flexible Smart Array Controllers or the PCIe Smart Array Controllers

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

Core 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.

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

Risers

NOTE: This server ships with no riser installed by default. If you want to use any PCIe cards, one of the below risers must be selected.

HPE DL160 Gen10 CPU1 x16/x8 PCIe Riser Kit	866432-B21
HPE DL160 Gen10 FlexibleLOM/NVMe Riser Kit	875748-B21

NOTE: Supported on CPU1

NOTE: This riser is required to use FlexibleLOM adapters

HPE DL160 Gen10 CPU2 x16 PCIe Riser Kit	866436-B21
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NOTE: Requires second processor to be installed

Cable Kits

HPE DL360 Gen9 Rear Serial Port and Enablement Kit	764646-B21
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Cooling Options

HPE DL160/120 Gen10 Redundant Fan Kit	866438-B21
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NOTE: This kit contains one additional fan.

Media Bay Options

HPE DL160/120 Gen10 2SFF SAS/SATA Enablement Kit	866458-B21
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NOTE: This option kit will enable the additional 2SFF drive in an 8SFF Chassis

NOTE: This is a Field Upgradable option only

NOTE: This kit contains all necessary cables required to connect to the drives and controllers.

Optical Drive Options

HPE 9.5mm SATA DVD-ROM Optical Drive	726536-B21
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NOTE: The ODD Enablement kit (873961-B21) is required for this option on a SFF model.

HPE 9.5mm SATA DVD-RW Optical Drive	726537-B21
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NOTE: The ODD Enablement kit (873961-B21) is required for this option on a SFF model.

HPE 1U Gen10 8SFF Optical Disk Drive Enablement Kit	873961-B21
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HPE Mobile USB DVD-RW Optical Drive	701498-B21
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NOTE: This option is only supported on USB 3.0 ports.

Security

HPE Trusted Platform Module 2.0 Gen10 Option	864279-B21
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HPE 1U Gen10 Bezel Kit	867998-B21
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HPE Bezel Lock Kit	875519-B21
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HPE 1U Gen10 Chassis Intrusion Detection Kit	866473-B21
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NOTE: This provides a physical connection from the chassis board and hood and detects any physical intrusion into the chassis, providing security during the entire supply chain process of shipping, receiving, distribution, and operation.

Core Options

HPE Processors

Please select one –L21 processor required above.

For second processor, please select the same processor model with –B21 from Core Options – HPE Processors section below.

For example: first processor, select 878947-L21 then for second processor, select 878947-B21.

NOTE: Mixing of 2 different processor models is not supported.

NOTE: For first processor, -L21 will include 3 fans, For second processor, -B21 will add 3 additional fans

NOTE: When 2nd Generation Intel Xeon Scalable Processor is selected, then only DDR4-2933 Memory Kit can be selected; When 1st Generation Intel Xeon Scalable Processor is selected, then only DDR4-2666 Memory Kit can be selected

SKU

2nd Generation Intel Xeon- Platinum

HPE DL160 Gen10 Intel Xeon-Platinum 8256 (3.8GHz/4-core/105W) Processor Kit P12005-B21

HPE DL160 Gen10 Intel Xeon-Platinum 8253 (2.2GHz/16-core/125W) Processor Kit P12004-B21

2nd Generation Intel Xeon-Gold

HPE DL160 Gen10 Intel Xeon-Gold 6252 (2.1GHz/24-core/150W) Processor Kit P11139-B21

HPE DL160 Gen10 Intel Xeon-Gold 6248 (2.5GHz/20-core/150W) Processor Kit P11138-B21

HPE DL160 Gen10 Intel Xeon-Gold 6244 (3.6GHz/8-core/150W) Processor Kit P11137-B21

HPE DL160 Gen10 Intel Xeon-Gold 6242 (2.8GHz/16-core/150W) Processor Kit P11136-B21

HPE DL160 Gen10 Intel Xeon-Gold 6240 (2.6GHz/18-core/150W) Processor Kit P11135-B21

HPE DL160 Gen10 Intel Xeon-Gold 6238 (2.1GHz/22-core/140W) Processor Kit P11145-B21

HPE DL160 Gen10 Intel Xeon-Gold 6234 (3.3GHz/8-core/130W) Processor Kit P11144-B21

HPE DL160 Gen10 Intel Xeon-Gold 6230 (2.1GHz/20-core/125W) Processor Kit P11134-B21

HPE DL160 Gen10 Intel Xeon-Gold 6226 (2.7GHz/12-core/125W) Processor Kit P11143-B21

HPE DL160 Gen10 Intel Xeon-Gold 6210U (2.5GHz/20-core/150W) Processor Kit P11141-B21

HPE DL160 Gen10 Intel Xeon-Gold 6209U (2.1GHz/20-core/125W) Processor Kit P11140-B21

HPE DL160 Gen10 Intel Xeon-Gold 5222 (3.8GHz/4-core/105W) Processor Kit P11142-B21

HPE DL160 Gen10 Intel Xeon-Gold 5220 (2.2GHz/18-core/125W) Processor Kit P11133-B21

HPE DL160 Gen10 Intel Xeon-Gold 5218 (2.3GHz/16-core/125W) Processor Kit P11132-B21

HPE DL160 Gen10 Intel Xeon-Gold 5217 (3.0GHz/8-core/115W) Processor Kit P11131-B21

HPE DL160 Gen10 Intel Xeon-Gold 5215 (2.5GHz/10-core/85W) Processor Kit P11130-B21

2nd Generation Intel Xeon- Silver

HPE DL160 Gen10 Intel Xeon-Silver 4216 (2.1GHz/16-core/100W) Processor Kit P11129-B21

HPE DL160 Gen10 Intel Xeon-Silver 4215 (2.5GHz/8-core/85W) Processor Kit P11128-B21

HPE DL160 Gen10 Intel Xeon-Silver 4214 (2.2GHz/12-core/85W) Processor Kit P11127-B21

HPE DL160 Gen10 Intel Xeon-Silver 4210 (2.2GHz/10-core/85W) Processor Kit P11126-B21

HPE DL160 Gen10 Intel Xeon-Silver 4208 (2.1GHz/8-core/85W) Processor Kit P11125-B21

1st Generation Intel Xeon-Silver

HPE DL160 Gen10 Intel Xeon-Silver 4110 (2.1GHz/8-core/85W) Processor Kit 878947-B21

2nd Generation Intel Xeon- Bronze

HPE DL160 Gen10 Intel Xeon-Bronze 3204 (1.9GHz/6-core/85W) Processor Kit P11124-B21

1st Generation Intel Xeon- Bronze

HPE DL160 Gen10 Intel Xeon-Bronze 3106 (1.7GHz/8-core/85W) Processor Kit 878945-B21

Core Options

HPE Memory

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

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

For Gen10 memory speed table, please go to: <https://www.hpe.com/docs/memory-speed-table>

For memory Reliability, Accessibility, Serviceability (RAS) features whitepaper like Gen10 Fast Fault Tolerance and legacy mirrored memory feature etc. please go to: <http://www.hpe.com/docs/memory-ras-feature>

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

NOTE: DDR4-2933 Memory Kits are only supported with 2nd Generation Intel Xeon Scalable Series Processors and DDR4-2666 Memory Kits are only supported with 1st Generation Intel Xeon Scalable Series Processors.

HPE DDR4 Memory

Registered DIMMs (RDIMMs) for 2nd Generation Intel Xeon Scalable Series

HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-B21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-B21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-B21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-B21
HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-B21

Registered DIMMs (RDIMMs) for 1st Generation Intel Xeon Scalable Series

HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-B21
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Load Reduced DIMMs (LRDIMMs) for 2nd Generation Intel Xeon Scalable Series

HPE 64GB (1x64GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P00926-B21
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NOTE: The maximum memory speed is a function of the memory type, memory configuration, and processor model.

HPE Drives

Enterprise - 12G SAS - SFF Drives

HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-B21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-B21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-B21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-B21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-B21
HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-B21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-B21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-B21

Enterprise - 12G SAS- LFF Drives

HPE 900GB SAS 12G Enterprise 15K LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware HDD	870761-B21
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Midline - 12G SAS - LFF Drives

HPE 12TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD	881781-B21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware HDD	834031-B21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware HDD	861746-B21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD	833928-B21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD	833926-B21

Midline - 12G SAS- SFF Drives

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-B21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-B21

Core Options

Midline - 6G SATA - LFF Drives

HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD	881787-B21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware HDD	834028-B21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Helium 512e Digitally Signed Firmware HDD	861742-B21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD	861683-B21
HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD	861681-B21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware HDD	861686-B21

Midline - 6G SATA- SFF Drives

HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-B21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-B21

SSD Selection

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

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

HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10444-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04519-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06586-B21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10442-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04517-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06584-B21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10440-B21

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

HPE 3.84TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10460-B21
HPE 1.92TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10454-B21
HPE 960GB SAS 12G Mixed Use SC 3yr Wty Value SAS Digitally Signed Firmware SSD	P10448-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09090-B21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04527-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-B21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-B21

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

HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04543-B21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04541-B21

Read Intensive - SATA - SFF - Solid State Drives

HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05946-B21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05938-B21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05932-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05928-B21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04560-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05924-B21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	875503-B21

Mixed Use - SATA - SFF - Solid State Drives

HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09722-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05986-B21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07930-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09716-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05980-B21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07926-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09712-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P05976-B21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-B21

Core Options

Mixed Use - SATA - LFF - Solid State Drives

HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) LPC 3yr Wty Digitally Signed Firmware SSD P09726-B21

Internal Dual M.2 Kit

HPE Universal SATA HHHL 3yr Wty M.2 Kit 878783-B21

NOTE: The Universal SATA M.2 Kit above will require a PCIe slot and support up to two of the same M.2 cards below.

Read Intensive - M.2 - Solid State Drives (2280 type)

HPE 960GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD 875500-B21

HPE 480GB SATA 6G Read Intensive M.2 2280 3yr Wty Digitally Signed Firmware SSD 875498-B21

Mixed Use - M.2 - Solid State Drives (2280 type)

HPE 960GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875492-B21

HPE 480GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875490-B21

HPE 240GB SATA 6G Mixed Use M.2 2280 3yr Wty Digitally Signed Firmware SSD 875488-B21

M.2 Cable Kit

HPE DL160/120 Gen10 M.2 SATA Cable Kit 866456-B21

NOTE: Must be selected along with "HPE Universal SATA HHHL 3yr Wty M.2 Kit- 878783-B21"

Hard Drive Blank Kits

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

HPE Networking

25 Gigabit Ethernet adapters

HPE Ethernet 10/25Gb 2-port 640SFP28 Adapter 817753-B21

HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter 817718-B21

HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter 867328-B21

10 Gigabit Ethernet adapters

HPE Ethernet 10Gb 2-port 562T Adapter 817738-B21

HPE Ethernet 10Gb 2-port 562SFP+ Adapter 727055-B21

NOTE: Can be installed only in Slot 2 and Slot 3

HPE Ethernet 10Gb 2-port 535T Adapter 813661-B21

HPE Ethernet 10Gb 2-port 530SFP Adapter 652503-B21

HPE Ethernet 10Gb 2-port 530T Adapter 656596-B21

HPE Ethernet 10Gb 2-port 521T Adapter 867707-B21

1 Gigabit Ethernet adapters

HPE Ethernet 1Gb 4-port 366T Adapter 811546-B21

NOTE: Can be installed only in Slot 1 and Slot 3

HPE Ethernet 1Gb 4-port 331T Adapter 647594-B21

NOTE: Can be installed only in Slot 1 and Slot 3

HPE Ethernet 1Gb 2-port 361T Adapter 652497-B21

HPE Ethernet 1Gb 2-port 332T Adapter 615732-B21

FlexibleLOM adapters

HPE Ethernet 10/25Gb 2-port 640FLR-SFP28 Adapter 817749-B21

HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter 817709-B21

HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter 867334-B21

HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter 727054-B21

HPE Ethernet 10Gb 2-port 562FLR-T Adapter 817745-B21

HPE FlexFabric 10Gb 4-port 536FLR-T Adapter 764302-B21

Core Options

FlexibleLOM adapters

HPE Ethernet 10Gb 2-port 535FLR-T Adapter	817721-B21
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
HPE Ethernet 1Gb 4-port 331FLR Adapter	629135-B22
HPE Ethernet 1Gb 4-port 366FLR Adapter	665240-B21

NOTE: The HPE ProLiant DL160 Gen10 chassis ships with 2x 1 Gb embedded.

NOTE: Only one FlexibleLOM can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped.

NOTE: FlexibleLOM Riser Kit (875748-B21) is required to install these adapters

Media Module adapters

HPE Ethernet 1Gb 2-port 368FLR-T Media Module Adapter	866464-B21
HPE Ethernet 10Gb 2-port 568FLR-SFP+ Media Module Adapter	866467-B21
HPE Ethernet 10Gb 2-port 568FLR-T Media Module Adapter	866470-B21

NOTE: The DL160 Gen10 chassis ships with 2x 1 Gb embedded.

NOTE: Only one Media Module can be added to the server. These options are upgradeable and can be changed from the original configuration after the server is shipped

NOTE: These adapters should be installed in the Media Module connector slot on the system board only.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HPE InfiniBand

HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	764284-B21
HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	764285-B21
HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	825110-B21
HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	825111-B21
HPE 100Gb 1-port OP101 QSFP28 x16 PCIe Gen3 with Intel Omni-Path Architecture Adapter	829335-B21

HPE Power Supplies

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen10 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.

HPE Flex Slot Power Supplies

HPE 500W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865408-B21
HPE 800W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit	865438-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	865414-B21
HPE 800W Flex Slot -48VDC Hot Plug Low Halogen Power Supply Kit	865434-B21
HPE 800W Flex Slot Universal Hot Plug Low Halogen Power Supply Kit	865428-B21
HPE DL160/180 Gen10 Redundant Power Supply Enablement Kit	866442-B21

NOTE: This enablement kit is required with the selection of a Flex Slot power supply

Additional Options

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

Embedded Management

HPE iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A

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
HPE OneView Physical Media Kit LTU	E5Y37A

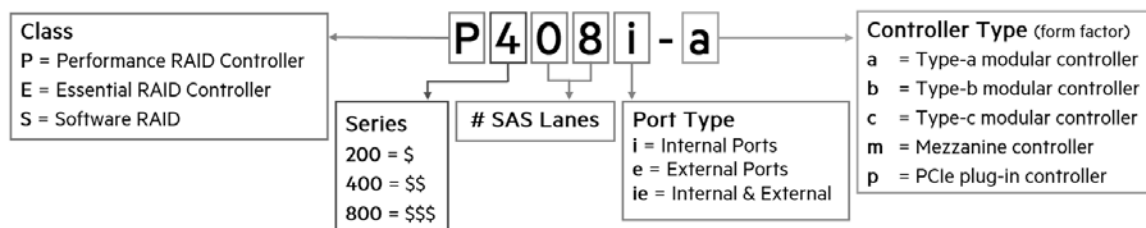
NOTE: Licenses ship without media. The HPE OneView Media Kit can be ordered separately, or can be downloaded at: <https://www.hpe.com/us/en/integrated-systems/software.html>

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.

NOTE: 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 Smart Array Controllers

The Gen10 controller naming framework has been updated to simplify identification as depicted below. For a more detailed breakout of the available Gen10 Smart Array controllers visit the [HPE Smart Array Gen10 Controllers Data Sheet](#).



Additional Options

HPE Flexible Smart Array Controllers

HPE Smart Array P408i-a SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS Modular LH Controller 869081-B21

HPE Smart Array E208i-a SR Gen10 (8 Internal Lanes/No Cache) 12G SAS Modular LH Controller 869079-B21

NOTE: Must also select either 4LFF or 8SFF Smart Array SAS Cable Kit (866452-B21; 866448-B21), depending on chassis

NOTE: All performance RAID controllers are supported by the HPE Smart Storage Battery (P01366-B21), which supports multiple devices and is sold separately.

NOTE: Does not occupy a PCIe expansion slot.

HPE Smart Array Controllers

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

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

HPE Cable Options

HPE 1U Gen10 4LFF Smart Array SAS Cable Kit 866452-B21

HPE 1U Gen10 8SFF Smart Array SAS Cable Kit 866448-B21

NOTE: Required when any Performance RAID Controller or Flexible Smart Array –a (i.e. P408i-a) controller is selected

HPE 96W Smart Storage Battery (up to 20 Devices) with 145mm Cable Kit P01366-B21

NOTE: Supports up to 6 P-class Smart Array controllers

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

NOTE: Supports up to 3 P-class Smart Array controllers

Optional Software

HPE Smart Array SR Secure Encryption (Data at Rest Encryption/per Server Entitlement) E-LTU Q2F26AAE

HPE Smart Array SR SmartCache (Single Key/Single Server) LTU D7S26A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) LTU D7S27A

HPE Smart Array SR SmartCache (Single Key/Multiple Servers) E-LTU D7S27AAE

NOTE: SmartCache is offered on HPE Smart Array performance RAID controllers

HPE Storage Options

Emulex Fibre Channel HBAs

HPE StoreFabric SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter Q0L13A

HPE StoreFabric SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter Q0L14A

HPE StoreFabric SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter Q0L11A

HPE StoreFabric SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter Q0L12A

QLogic Fibre Channel HBAs

HPE StoreFabric SN1100Q 16Gb Single Port Fibre Channel Host Bus Adapter P9D93A

HPE StoreFabric SN1100Q 16Gb Dual Port Fibre Channel Host Bus Adapter P9D94A

HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter P9M75A

HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter P9M76A

Converged Network Adapter

HPE StoreFabric CN1100R Dual Port Converged Network Adapter QW990A

HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter N3U52A

HPE StoreFabric CN1200E 10GBASE-T Dual Port Converged Network Adapter N3U51A

Additional Options

HPE Rack Options

Rail Kits

HPE 1U Small Form Factor Easy Install Rail Kit 734807-B21

HPE 1U Cable Management Arm for Rail Kit 734811-B21

HPE Racks

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

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

HPE Power Distribution Units (PDUs)

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

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

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

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

HPE Uninterruptible Power Systems (UPS)

To learn more, please visit the [HPE Uninterruptible Power Systems \(UPS\) web page](#).

Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on these products and their specifications.

Please see the [HPE Line Interactive Single Phase UPS QuickSpecs](#) for information on these products and their specifications.

HPE Rack Options

Please see the [HPE IT Access and Control](#) for information on these products and their specifications.

HPE USB and SD Options

HPE Enterprise Mainstream Flash Media Kits for Memory Cards

HPE 32GB microSD Flash Memory Card 700139-B21

HPE 8GB Dual microSD Flash USB Drive 741279-B21

Additional options available to add as “ad-hoc” in OCA

NOTE:*These options will not be visible in OCA and must be added manually via the ad-hoc section

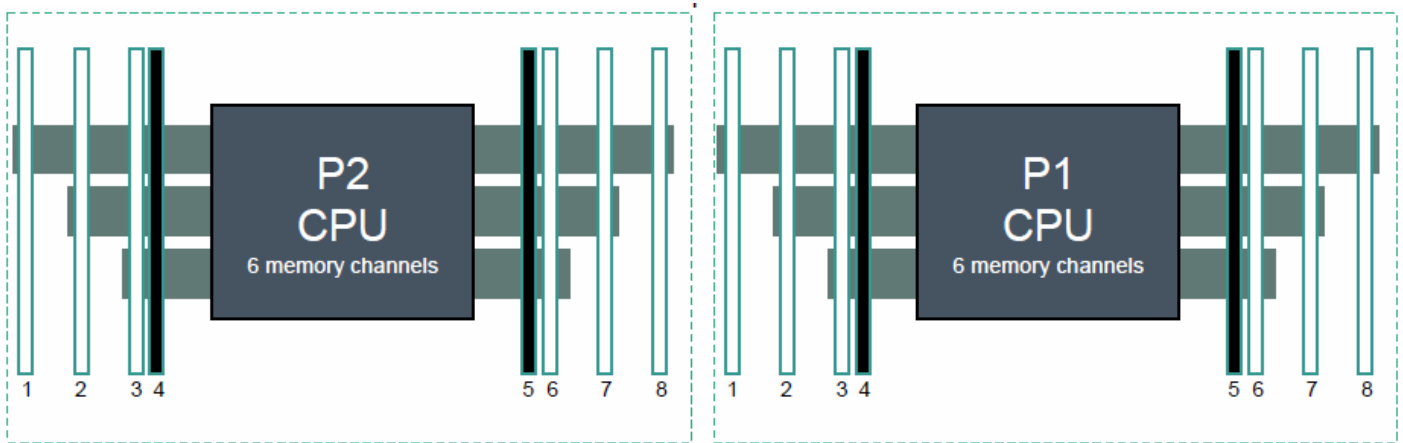
HPE Memory

HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit 815100-B21

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

Memory

Memory Population guidelines



HPE DL160/DL180 Gen 10 Servers Front Server
(2+1+1 slots per channel)

1 DIMM			3					
2 DIMM s		2	3					
3 DIMM s	1	2	3					
4 DIMM s		2	3			6	7	
5 DIMM s*	1	2	3			6	7	
6 DIMM s	1	2	3			6	7	8
7 DIMM s*	1	2	3	4		6	7	8
8 DIMM s*	1	2	3	4	5	6	7	8

HPE ProLiant Gen10 8 slot per CPU DIMM population order

NOTE:*Unbalanced, not recommended

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

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

For details on the HPE Server Memory speed, visit: <https://www.hpe.com/docs/memory-speed-table>

Technical Specifications

System Unit

Dimensions	4.29 x 43.46 x 61.49 cm 1.69 x 17.11 x 24.21 in	
Weight (approximate)	24.19lb	SFF Minimum: 8 SFF chassis with 1x SFF HDD, 1 X Memory DIMM, 3 Fans, 1 Processor with heatsink, 1 power supply ,
	10.97kg	1 Processor with heatsink, 1 power supply ,
	30.69 lb	SFF Maximum: 8SFF chassis with 8 SFF HDD, 1 X Memory DIMM, 6 Fans,
	13.92 kg	2 Processors with heatsink, 2 power supplies
	25.69 lb	LFF Minimum: 4 LFF chassis with 1X LFF Hard Drive, 1X Memory DIMM,
	11.65 kg	3 Fans, 1 Processor with heatsink, 1 power supply
	34.69 lb	LFF Maximum: 4 LFF chassis with 4X LFF Hard Drive, 1X Memory DIMM,
15.74kg	6 Fans, 2 Processors with heatsink, 2 power supplies	
Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
	BTU Rating	Maximum For 500W Power Supply: 1979 BTU/hr (at 100 VAC), 1911 BTU/hr (at 200 VAC), 1965 BTU/hr (at 240 VAC) for China Only
Power Supply Output (per power supply)	Rated Steady-State Power	For 500W Power Supply: 500W (at 100 VAC), 500W (at 240 VAC), 500W (at 240 VAC) input for China only
	Maximum Peak Power	For 500W Power Supply: 500W (at 100 to 127 VAC), 500W (at 200 to 240 VAC), 500W (at 240 VAC) input for China only
System Inlet Temperature	Standard Operating Temperature	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1,800 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.
	Extended Ambient Operating Temperature	System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F). 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 (574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae
	Non-operating	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 (410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: http://www.hpe.com/servers/ashrae System performance may be reduced if operating in the extended ambient operating range or with a fan fault. -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).

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

Acoustic Noise

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

Configuration SKU	LFF Config	SFF Config
Idle		
LWAd	4.5 B	4.5 B
LpAm	28.1 dBA	27.8 dBA
Operating		
LWAd	5.1 B	5.1 B
LpAm	34.0 dBA	33.0 dBA

NOTE: Acoustics levels will vary depending on system configuration. Values are based on below configurations and are for reference only.

NOTE: Additional options may result in increased sound levels.

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Emissions Classification (EMC) – Regulatory Information

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

<http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>

HPE Smart Array

For latest information on [HPE Smart Array Gen10 Controllers for HPE ProLiant DL, ML and Apollo Servers](#) please refer to their QuickSpecs. (E208i-a,E208i-p,E208e-p,P408i-a,P408i-p,P408e-p,P816i-a)

<https://h20195.www2.hpe.com/v2/getdocument.aspx?docname=a00047736enw>

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

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

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

Summary of Changes

Date	Version History	Action	Description of Change
07-Oct-2019	Version 6	Changed	All sections were updated.
12-Aug-2019	Version 5	Changed	Overview, Standard Features, Additional Options and Memory sections were updated.
05-Aug-2019	Version 4	Changed	Overview, Standard Features, Optional Features, Additional Options and Memory sections were updated.
03-Jun-2019	Version 3	Changed	Overview, Additional Options and Pre-configured Models sections were updated.
15-Apr-2019	Version 2	Changed	Overview, Standard Features, Optional Features and Pre-configured Models sections were updated.
04-Feb-2019	Version 1	New	New QuickSpecs



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