

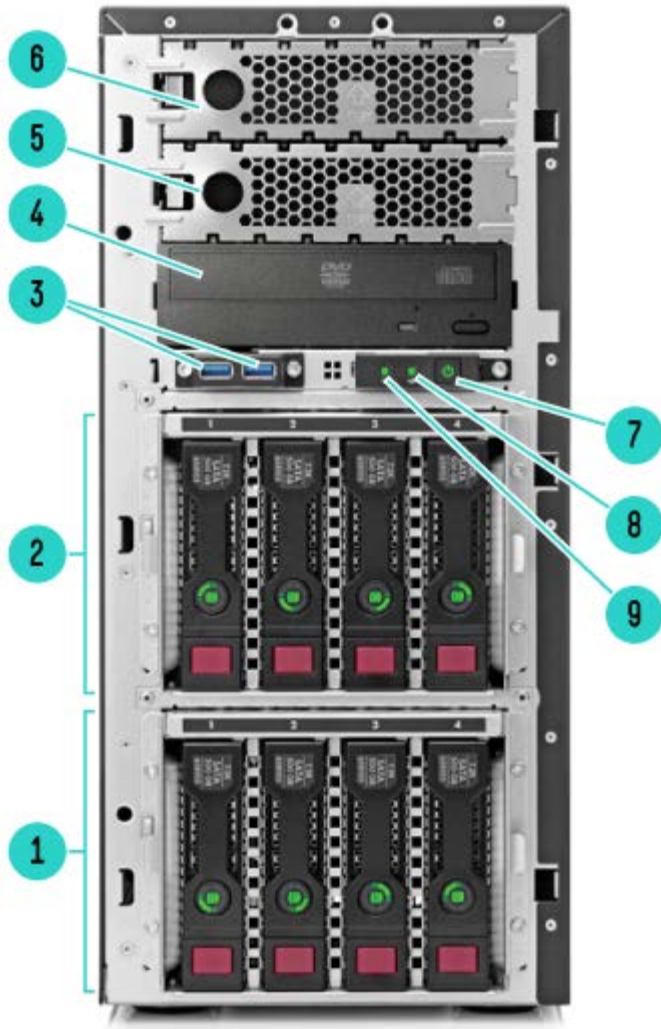
# QuickSpecs

## HPE ProLiant ML150 Generation9 (Gen9)

### Overview

### HPE ProLiant ML150 Generation9 (Gen9)

The HPE ProLiant ML150 Gen9 Server delivers the essential mix of performance, price and expandability to fit the needs of growing budget conscious businesses. Designed as a dual-socket tower server, it is a right size tower with performance and expandability. With expansion options, it allows you to grow as needed with a low initial capital outlay. Covering a wide range of applications and workloads and addressing our customers from sophisticated SMB to large enterprise class server environments.



### Front View details for Tower (LFF)

- |                                                                                                |                                                                      |                                                                                                |                                                                      |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1                                                                                              | Drive Cage (4 LFF shown) Alternative server choice would offer 8 SFF | 2                                                                                              | Drive Cage (4 LFF shown) Alternative server choice would offer 8 SFF |
| 3                                                                                              | USB 3.0 (2)                                                          | 4                                                                                              | Media bay, Optional SATA 9.5mm DVD-ROM shown                         |
| 5                                                                                              | Media bay, blank shown*                                              | 6                                                                                              | Media bay, blank shown*                                              |
| <b>NOTE:</b> Optional choices: SATA 9.5mm DVD-ROM or DVD RW Optical Drive, Tape Drive, or LFF. |                                                                      | <b>NOTE:</b> Optional choices: SATA 9.5mm DVD-ROM or DVD RW Optical Drive, Tape Drive, or LFF. |                                                                      |
| <b>NOTE:</b> When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible |                                                                      |                                                                                                |                                                                      |

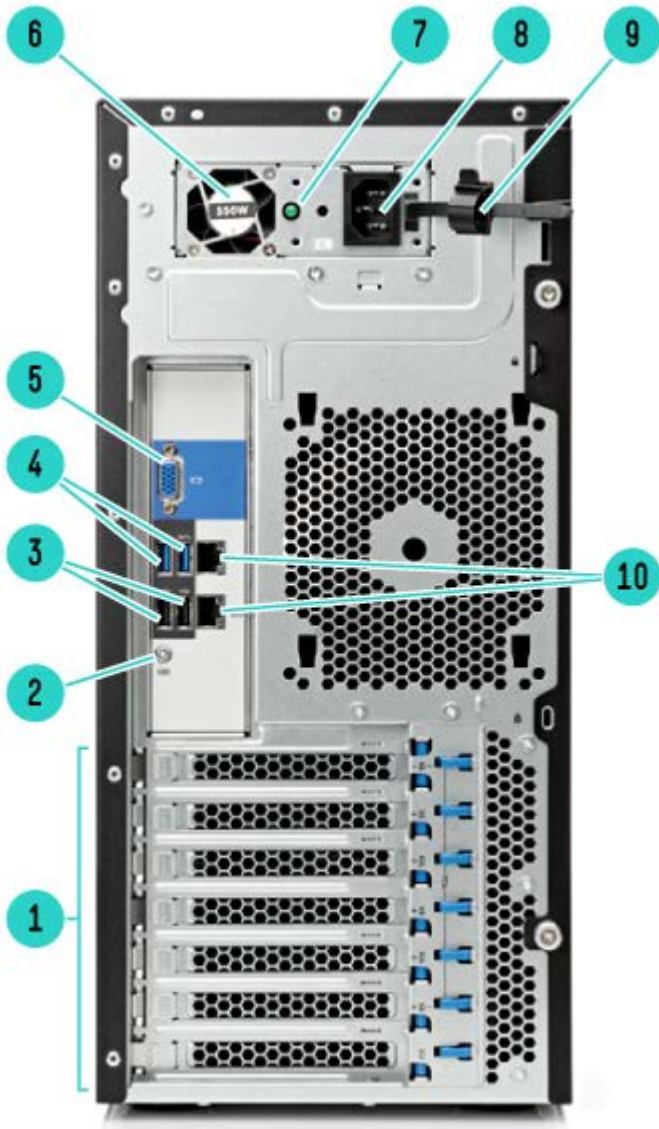
## Overview

Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

- 7 Power On/Standby button and system power LED button
- 9 Health LED

**NOTE:** When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

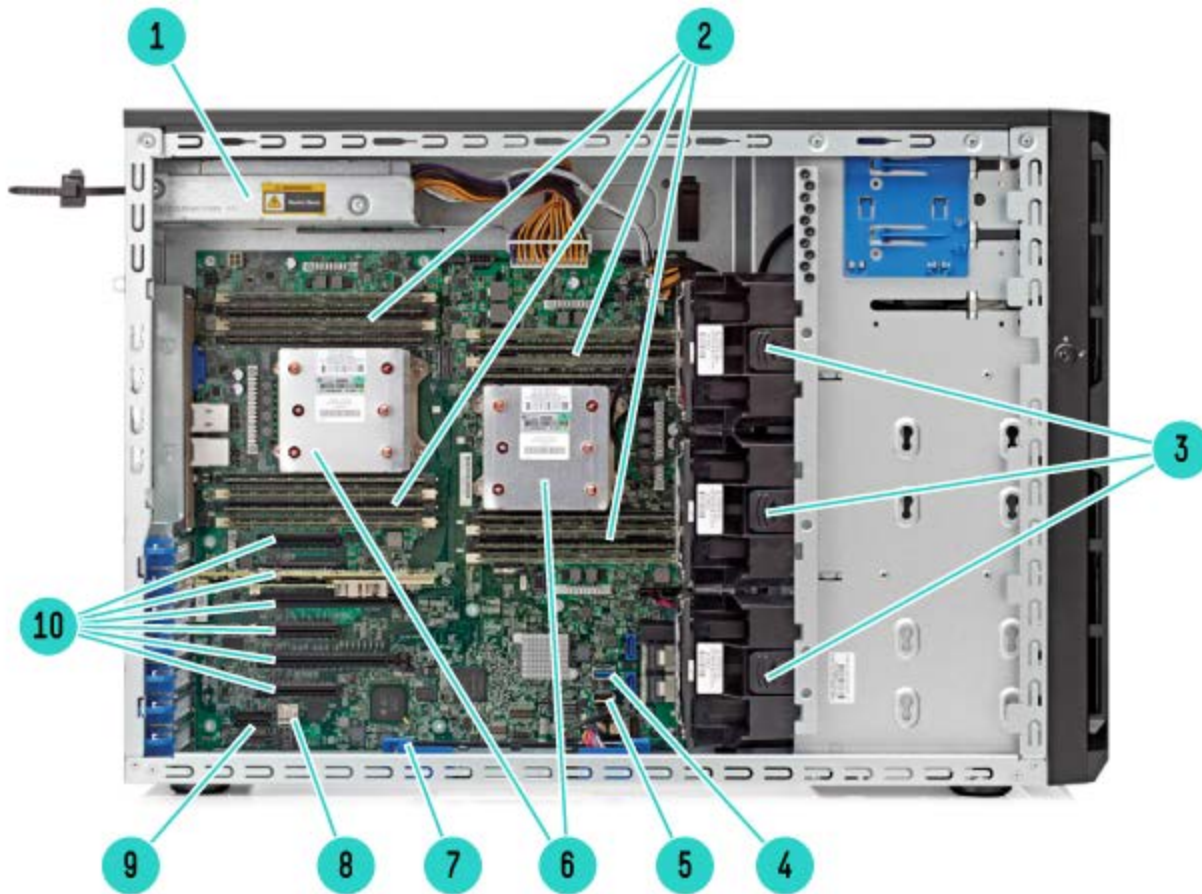
- 8 NIC status



### Rear View (Tower Model)

- 1 PCI Slots (Slots 1-6) Slot 3 and 5 can support Optional GPU
- 2 Unit ID LED
- 3 USB 2.0 (2)
- 4 USB 3.0 (2)
- 5 Video Connector
- 6 HPE 550W Power Supply
- 7 Power supply Power LED
- 8 Power Supply Power connection
- 9 Cable tie back
- 10 Network RJ-45 Ports (2)

## Overview



### Internal View (Tower Model)

- |   |                                       |    |                                                                                             |
|---|---------------------------------------|----|---------------------------------------------------------------------------------------------|
| 1 | Power Supply                          | 2  | Sixteen (16) DDR4 DIMM slots. Shown fully populated in 16 slots (8 per processor)           |
| 3 | System Fans: Three fans for 2P SKU    | 4  | Internal USB 3.0 connector                                                                  |
| 5 | Internal USB 2.0 connector            | 6  | Two (2) processors and heatsinks with HPE Smart Socket Guide (Second Processor is Optional) |
| 7 | Gen9 Smart Storage Battery Holder Kit | 8  | MicroSD slot                                                                                |
| 9 | Dedicated iLO module slot (optional)  | 10 | Six (6) PCIe expansion slots                                                                |

### What's New

- HPE 12TB SATA 7.2K LFF HDD
- HPE RDX 4TB USB 3.0 External/ Internal Disk Backup System
- ClearOS, an easy to use OS with an application marketplace, allows you to build a fully functional server that is just right for you at no upfront cost. To learn more on what you can do, please visit <http://www.hpe.com/servers/clearos>

## Standard Features

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

### Processor

One of the following depending on model

| Model      | CPU frequency | Cores | L3 Cache | Power | QPI     | DDR4 Hz |
|------------|---------------|-------|----------|-------|---------|---------|
| E5-2660v3  | 2.6GHz        | 10    | 25MB     | 105W  | 9.6GT/s | 2133    |
| E5-2650v3  | 2.3GHz        | 10    | 25MB     | 105W  | 9.6GT/s | 2133    |
| E5-2650Lv3 | 1.8GHz        | 12    | 30MB     | 65W   | 9.6GT/s | 2133    |
| E5-2640v3  | 2.6GHz        | 8     | 20MB     | 90W   | 8.0GT/s | 1866    |
| E5-2630v3  | 2.4GHz        | 8     | 20MB     | 85W   | 8.0GT/s | 1866    |
| E5-2630Lv3 | 1.8GHz        | 8     | 20MB     | 55W   | 8.0GT/s | 1866    |
| E5-2609v3  | 1.9GHz        | 6     | 15MB     | 85W   | 6.4GT/s | 1600    |
| E5-2620v3  | 2.4GHz        | 6     | 15MB     | 85W   | 8.0GT/s | 1866    |
| E5-2603v3  | 1.6GHz        | 6     | 15MB     | 85W   | 6.4GT/s | 1600    |
| E5-2660v4  | 2.0GHz        | 14    | 35MB     | 105W  | 9.6GT/s | 2400    |
| E5-2650v4  | 2.2GHz        | 12    | 30MB     | 105W  | 9.6GT/s | 2400    |
| E5-2650Lv4 | 1.7GHz        | 14    | 35MB     | 65W   | 9.6GT/s | 2400    |
| E5-2640v4  | 2.4GHz        | 10    | 25MB     | 90W   | 8.0GT/s | 2133    |
| E5-2630v4  | 2.2GHz        | 10    | 25MB     | 85W   | 8.0GT/s | 2133    |
| E5-2630Lv4 | 1.8GHz        | 10    | 25MB     | 55W   | 8.0GT/s | 2133    |
| E5-2620v4  | 2.1GHz        | 8     | 20MB     | 85W   | 8.0GT/s | 2133    |
| E5-2609v4  | 1.7GHz        | 8     | 20MB     | 85W   | 6.4GT/s | 1866    |
| E5-2603v4  | 1.7GHz        | 6     | 15MB     | 85W   | 6.4GT/s | 1866    |
| E5-2695v4  | 2.1GHz        | 18    | 45MB     | 120W  | 9.6GT/s | 2400    |
| E5-2683v4  | 2.1GHz        | 16    | 40MB     | 120W  | 9.6GT/s | 2400    |
| E5-2680v4  | 2.4GHz        | 14    | 35MB     | 120W  | 9.6GT/s | 2400    |

**NOTE:** Up to 2 processors supported. Mixing different processor models is not supported.

**NOTE:** Recommend to select 900W for 2P config. or check power advisor for power consumption for the customer usage case.

### Cache Memory

One of the following depending on model

15MB (1 x 15MB) Level 3 cache

**NOTE:** For Six-core processors.

20MB (1 x 20MB) Level 3 cache

**NOTE:** For Eight-core processors.

25MB (1 x 25MB) Level 3 cache

**NOTE:** For Ten-core processors.

30MB (1 x 30MB) Level 3 cache

**NOTE:** For Twelve-core processors.

35MB (1 x 35MB) Level 3 cache

**NOTE:** For Fourteen-core processors.

### Chipset

Intel® C610 Series Chipset

Intel® E5-2600v4 Processor Family

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

URL: <http://www.intel.com/products/server/chipsets/>.

### On System Management Chipset

HPE iLO (Firmware HPE iLO4 2.0 or later) with NAND

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

## QuickSpecs

## HPE ProLiant ML150 Generation9 (Gen9)

### Standard Features

#### Memory

Type:  
HPE SmartMemory  
DDR4 Registered (RDIMM) or Load Reduced (LRDIMM)  
DIMM Slots Available 16  
Maximum Capacity 512GB (16 x 32GB LRDIMM @2400MHz)  
(LRDIMM)  
Maximum Capacity 512GB (16 x 32GB RDIMM @2400MHz)  
(RDIMM)

**NOTE:** This server does not support mixing LRDIMMs or RDIMMs. Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS installation.

#### 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.

#### Network Controller

Broadcom 5717 Dual-port 1Gb

#### Expansion Slots

| Expansion Slots # | Technology | Bus Width | Connector Width | Bus Number | Form Factor                   | Notes           |
|-------------------|------------|-----------|-----------------|------------|-------------------------------|-----------------|
| 6                 | PCIe 3.0   | x8        | x8              |            | Full length/full height       | For processor 1 |
| 5                 | PCIe 3.0   | x16       | x16             |            | Full length/full height       | For processor 1 |
| 4                 | PCIe 3.0   | x8        | x8              |            | Half length/full height       | For processor 1 |
| 3                 | PCIe 3.0   | x16       | x16             |            | Full-height, full-length slot | For processor 2 |
| 2                 | PCIe 3.0   | x8        | x8              |            | Half length/full height       | For processor 1 |
| 1                 | PCIe 3.0   | x8        | x8              |            | Half length/full height       | For processor 2 |

**NOTE:** Bus number - Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.

**NOTE:** Six total expansion PCIe 3.0 slots. Two PCIe 3.0 x16 (x16 speed); Four PCIe 3.0 x 8 (x8 speed).

| Expansion Slots # | Technology                         | Bus Width | Connector Width | Bus Number | Device Number | Form Factor            | Notes |
|-------------------|------------------------------------|-----------|-----------------|------------|---------------|------------------------|-------|
| 7                 | HPE ML Gen9 Dedicated iLO Port Kit | x1        | x1              |            |               | Dedicate for ML Series |       |

#### Storage Controller

Entry Models  
One of the following depending on model

HPE Dynamic Smart Array B140i Controller

**NOTE:** B140i can't mix with any standup internal controller.

Base Models  
HPE Dynamic Smart Array B140i Controller

**NOTE:** B140i can't mix with any standup internal controller.

Performance Models  
HPE H240 FIO Smart Host Bus Adapter

#### Internal Storage Devices

Optical Drive  
One of the following depending on model

Optional SATA 9.5mm DVD-ROM Optical Drive  
Optional SATA 9.5mm DVD RW Optical Drive

**NOTE:** Optical is optional in entry, base and performance BTO models.

**NOTE:** ML150 Gen9 Slim ODD Enablement Kit (P/N: 784603-B21) is required for any DVD options.

Standard Features

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hard Drives     | None ship standard                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Hard Drive Bays | Up to 10 Non-hot plug SATA 3.5" drives                                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | <b>NOTE:</b> Mixing drive cage types is not allowed.                                                                                                                                                                                                                                                                                                                                                                                           |
|                 | <b>NOTE:</b> All Pre-configured Models come populated with hard drive blanks installed. The 4LFF configurations includes 2 blanks and 8SFF includes 6 blanks. Additional hard drive blanks can be ordered using either P/N 654963-B21for the HPE LFF HDD Blank Kit or P/N 654961-B21for the HPE SFF HDD Blank Kit. These part numbers for single HDD blanks below are also provided should you require replacement HDD blanks for your server. |
|                 | <b>NOTE:</b> NHPE SATA is limited to B140i controller.                                                                                                                                                                                                                                                                                                                                                                                         |
|                 | <b>NOTE:</b> When populate 10 LFF, not able to install any Tape Drive and Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).                                                                                                                                                                                                                        |
|                 | <b>NOTE:</b> Must select two 4LFF NHPE drive cage and 10LFF enablement kit if customer wants to support 10 LFF drives.                                                                                                                                                                                                                                                                                                                         |
|                 | 4 Hot plug LFF SAS/SATA HDD bays; upgradable to 8                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | 8 Hot plug SFF SAS/SATA HDD bays; upgradable to 16                                                                                                                                                                                                                                                                                                                                                                                             |
|                 | <b>NOTE:</b> 16SFF is limited to P840 controller.                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | <b>NOTE:</b> 10LFF is limited to H140i controller                                                                                                                                                                                                                                                                                                                                                                                              |
|                 | <b>NOTE:</b> H240 8LFF/8SFF require 2 cable kit P/N: 784606-B21.                                                                                                                                                                                                                                                                                                                                                                               |
|                 | <b>NOTE:</b> P84016SFF require 2 cable kit P/N: 784608-B21.                                                                                                                                                                                                                                                                                                                                                                                    |

| Maximum Internal Storage                | CAPACITY              | CONFIGURATION |
|-----------------------------------------|-----------------------|---------------|
| One of the following depending on model | Hot Plug LFF SAS      | 80TB          |
|                                         | Hot Plug LFF SATA     | 80TB          |
|                                         | Hot Plug SFF SAS      | 32TB          |
|                                         | Hot Plug SFF SATA     | 32TB          |
|                                         | Non Hot Plug LFF SATA | 40TB          |
|                                         | Hot Plug LFF SAS SSD  | 12.8TB        |
|                                         | Hot Plug LFF SATA SSD | 30.72TB       |
|                                         | Hot Plug SFF SAS SSD  | 30.72TB       |
|                                         | Hot Plug SFF SATA SSD | 61.44TB       |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply                            | HPE 550W FIO Power Supply                                                                                                                                                                                                                                                                                                                                                                             |
| One of the following depending on model | HPE 900W AC 240V DC Redundant Power Supply                                                                                                                                                                                                                                                                                                                                                            |
|                                         | <b>NOTE:</b> Each Redundant Power Supply Backplane can support up to two (2) power input modules. Non-redundant configurations with a single power input module installed can provide up to 900W (200 – 240VAC) and up to 550W (100 – 127VAC) of power. Redundant configurations with two power input modules installed can provide up to 800W (200 – 240VAC) and up to 550W (100 – 127VAC) of power. |
|                                         | Looking for high-efficiency power solutions at an entry-level price for your ProLiant Gen9 Essential Server? HPE Entry-Level Power Supplies offer an optimized set of features with options for both redundant and non-redundant power configurations.                                                                                                                                                |

The HPE 550W FIO Power Supply offers Silver-certified 80 Plus power efficiency (up to 89%) with an optimized set of features for non-redundant power configurations.

The HPE 900W AC 240VDC Power Input Module with Power Backplane can be configured to support power redundancy in ProLiant servers that offer only a single power supply bay, providing additional protection against power loss. With an 80 Plus Gold power efficiency rating (up to 92%), this power option helps to reduce operating expenses while protecting against trapped power capacity in the data

## Standard Features

center. Hot-plug AC power input modules allow for better serviceability with fast and easy deployment and replacement.

### Rack Options

One of the following depending on model

HPE T/R CONV TRAY UNIVERSAL KIT

### System Fans

One of the following depending on model

|                                                                                                      | Non-redundant | Redundant |
|------------------------------------------------------------------------------------------------------|---------------|-----------|
| 1P model                                                                                             | 2 fans        | NA        |
| <b>NOTE:</b> Two (2) Non-hot plug, non-redundant fans ship as standard.                              |               |           |
|                                                                                                      | Non-redundant | Redundant |
| 2P model                                                                                             | 3 fans        | NA        |
| <b>NOTE:</b> Third fan is shipped with 2nd CPU Kit. Third fan is only required in 2P configurations. |               |           |

### Interfaces

|                                                                                                                                                                        |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Video                                                                                                                                                                  | 1 (rear)                         |
| Network RJ-45 (Ethernet)                                                                                                                                               | 2                                |
| HPE iLO Remote Management Network Port                                                                                                                                 | 2GB NAND                         |
| <b>NOTE:</b> Dedicated Port for iLO is Optional.                                                                                                                       |                                  |
| Micro SD Slot                                                                                                                                                          | 1 (internal)                     |
| <b>NOTE:</b> The Micro-SD slot is not a hot-pluggable device. Customers should not attempt to plug a Micro-SD card into the Micro-SD slot while the server is powered. |                                  |
| USB 3.0                                                                                                                                                                | 5 (2 rear, 1 internal, 2 front ) |
| USB 2.0                                                                                                                                                                | 3 (2 rear, 1 internal)           |

### Operating Systems and Virtualization Software Support for ProLiant Servers

**Microsoft Windows Server**  
**Red Hat Enterprise Linux (RHEL)**  
**SUSE Linux Enterprise Server (SLES)**  
**VMware**  
**ClearOS**

**NOTE:** ClearOS allows you to build a fully functional server that is just right for you at no upfront cost. It is available via CTO preload, Intelligent Provisioning or via download. For more information on ClearOS, please visit <http://www.hpe.com/servers/clearos>.

**NOTE:** For more information on Hewlett Packard Enterprise Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hpe.com/info/ossupport> and our [driver download page](#).

### Upgradeability

Upgradeable to 2 processors (36 Cores)  
**NOTE:** Total 6, 8, 10, 12, 14, 16, 18 cores.  
 Up to 16 SFF Hard Drive Bays; Or 10 LFF Hard Drive Bays  
 Up to 16 DIMM slots  
 Redundant Power Supply  
 Tower to rack conversion  
 Optional optical drive (up to 1)  
**NOTE:** When populate 10 LFF, not able to install Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

## Standard Features

|                                     |                                         |
|-------------------------------------|-----------------------------------------|
| <b>Industry Standard Compliance</b> | ACPI 2.0b Compliant                     |
|                                     | PCIe 3.0 Compliant                      |
|                                     | PXE Support                             |
|                                     | WOL Support                             |
|                                     | Novell Certified                        |
|                                     | IPMI 2.0, SMASH CLP, DCMI 1.0 compliant |
|                                     | Microsoft® Logo certifications          |
|                                     | USB 3.0 Support                         |
|                                     | SMBIOS 2.7.1                            |
|                                     | ASHRAE A3                               |

|                 |                                       |
|-----------------|---------------------------------------|
| <b>Graphics</b> | Integrated Matrox G200 video standard |
|                 | • 1280 x 1024 (32 bpp)                |
|                 | • 1920 x 1200 (16 bpp)                |

|                                       |                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HPE Server<br/>UEFI/Legacy ROM</b> | 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 Gen9 platform defaults to UEFI and can be factory or field configured for Legacy BIOS Boot Mode. |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**NOTE:** The UEFI System Utilities function 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
- 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 RESTful API for iLO 4
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations

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

**NOTE:** UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant Gen9 Server.

|                    |                    |
|--------------------|--------------------|
| <b>Form Factor</b> | Tower or Rack (5U) |
|--------------------|--------------------|

|                            |                                            |                                                                                                                                                                                                                                |
|----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Embedded Management</b> | <b>HPE Integrated Lights-Out (HPE iLO)</b> | Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Not available on ML10 Gen9. Learn more at <a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a> . |
|----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|             |                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UEFI</b> | Configure and boot your servers securely with industry standard Unified Extensible Firmware Interface (UEFI). Learn more at <a href="http://www.hpe.com/servers/uefi">http://www.hpe.com/servers/uefi</a> . |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Standard Features

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RESTful API</b>              | RESTful API for iLO 4 is Redfish 1.0 conformance for simplified server management such as configuration and maintenance tasks based on modern industry standards. Learn more at <a href="http://www.hpe.com/info/restfulapi">http://www.hpe.com/info/restfulapi</a> .                                                                                                                                                                             |
| <b>Intelligent Provisioning</b> | Hassle free server and OS provisioning for 1 or few servers with Intelligent Provisioning. Learn more at <a href="http://www.hpe.com/servers/intelligentprovisioning">http://www.hpe.com/servers/intelligentprovisioning</a> .                                                                                                                                                                                                                    |
| <b>Embedded Remote Support</b>  | The Hewlett Packard Enterprise embedded remote support, when used with Insight Online direct connect or HPE Insight Remote Support, allows HPE ProLiant servers to transmit hardware events directly to Hewlett Packard Enterprise or a Hewlett Packard Enterprise Authorized Partner for automated phone home support. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> . |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server utilities</b> | <b>Smart Update</b>                                                                                                                                                                                                                                                                                                                                                                                                   | Optimize firmware and driver updates with Smart Update solutions including Smart Update Manager (SUM) and Service Pack for ProLiant (SPP) and smart components. Learn more at <a href="http://www.hpe.com/servers/smartupdatemanager">http://www.hpe.com/servers/smartupdatemanager</a> .                                                                                                                                                                    |
|                         | <b>HPE Systems Insight Manager (HPE SIM)</b>                                                                                                                                                                                                                                                                                                                                                                          | HPE SIM allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers, and 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 <a href="http://www.hpe.com/servers/hpsim">http://www.hpe.com/servers/hpsim</a> .                                                                                             |
|                         | <b>Scripting Tool Kit and Windows PowerShell</b>                                                                                                                                                                                                                                                                                                                                                                      | Provision 1 to many servers using your own scripts to discover and deploy them with Scripting Tool Kit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hpe.com/servers/proliant/stk">http://www.hpe.com/servers/proliant/stk</a> or <a href="http://www.hpe.com/servers/powershell">http://www.hpe.com/servers/powershell</a> .                                                                     |
|                         | <b>RESTful Interface Tool</b>                                                                                                                                                                                                                                                                                                                                                                                         | RESTful Interface tool is a scripting tool to provision using RESTful API for iLO 4 to discover and deploy servers at scale. Learn more at <a href="http://www.hpe.com/info/resttool">http://www.hpe.com/info/resttool</a> .                                                                                                                                                                                                                                 |
|                         | <b>HPE iLO Mobile Application</b>                                                                                                                                                                                                                                                                                                                                                                                     | Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hpe.com/info/ilo/mobileapp">http://www.hpe.com/info/ilo/mobileapp</a> .                                                                                                                                                                                         |
|                         | <b>HPE Insight Online</b>                                                                                                                                                                                                                                                                                                                                                                                             | HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, HPE Pointnext operational services or contractual support agreement with Hewlett Packard Enterprise, is a personalized dashboard for simplified tracking of IT operations and support information from anywhere, anytime. Learn more at <a href="http://www.hpe.com/info/insightonline/explore">http://www.hpe.com/info/insightonline/explore</a> . |
|                         | <b>NOTE:</b> More information can be found: <a href="https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html">https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html</a> , <a href="http://www.hp.com/go/spp">http://www.hp.com/go/spp</a> and <a href="https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html">https://www.hpe.com/us/en/product-catalog/detail/pip.5182020.html</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Security

Power-on password  
Setup password

## Standard Features

Serial interface control  
Power switch security  
Administrator's password  
TPM 1.2  
UEFI

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### Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair 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, 1-Year Labor, 1-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

### Embedded Management

#### iLO Essentials

HPE iLO Essentials is the preferred license for small and medium business that offers full remote server management capabilities for small and medium business via the Integrated Remote Console (IRC), virtual media, and e-mail based alerts. Learn more about HPE iLO Essentials at <http://www.hpe.com/servers/iLO/essentials>.

#### iLO Scale-Out

HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments for the DL 100 and 10 series servers, not available for ML servers. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications. For more information, visit <http://www.hpe.com/servers/iLO/scale-out>.

#### 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>.

### Server Management

#### HPE Insight Control

HPE Insight Control, lets you deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. For more information, see <http://www.hpe.com/info/insightcontrol>.

### High Performance Clusters

HPE Insight Cluster Management Utility (CMU) is a Hewlett Packard Enterprise licensed and supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <https://www.hpe.com/us/en/product-catalog/detail/pip.3296361.html>.

HPE Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPEC Server. A Cluster Platform Configurator simplifies ordering. <https://www.hpe.com/us/en/solutions/hpc-high-performance-computing.html>.

### HPC Interconnects

**NOTE:** High Performance Computing (HPC) interconnect technologies are available for this server under the HPE Cluster Platform product portfolio. These high-speed interconnects are fully supported by Hewlett Packard Enterprise when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPEC Clusters with InfiniBand Interconnects: <https://www.hpe.com/us/en/solutions/hpc-high-performance-computing.html>.

### Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than Hewlett Packard Enterprise storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities. Storage software that gets the job done:

- **Data Protection and Recovery Software**

Whether you're a large enterprise or a smaller business, Hewlett Packard Enterprise data

## Optional Features

protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.

- **Data Archive and Migration Software**

Hewlett Packard Enterprise storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.

- **Storage Resource Management Software (SRM)**

Hewlett Packard Enterprise storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.

- **Data Replication Software**

Hewlett Packard Enterprise offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.

- **Storage Device Management Software**

Maximize your investment in Hewlett Packard Enterprise storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.

- **HPE StoreVirtual VSA**

With HPE StoreVirtual VSA you can use the power of virtualization to create a virtual array within your host server. Manage it as a single pool of shared storage capacity, and scale it to match your evolving needs. HPE ProLiant Gen9 servers include a 3-year limited license for HPE StoreVirtual VSA software with 1TB of capacity at no extra cost. Simply select to install HPE StoreVirtual VSA software during server setup within Intelligent Provisioning.

**NOTE:** For more information about Storage Software including QuickSpecs, please see: <https://www.hpe.com/us/en/product-catalog/storage/storage-software.hits-12.html>.

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### ClearOS

HPE and ClearCenter will help you lower the cost of building on-premise solutions without sacrificing security and ease of use. HPE ProLiant servers with ClearOS give you a simple, secure, and affordable operating system with an intuitive web based graphical user interface that provides a cloud-like experience on- premise, and an Application Marketplace with over 100 apps and growing. Whether you're starting out or scaling, you decide what applications you need and pay as you grow.

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### 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. <http://ocs.ext.hpe.com/>.

## Service and Support

**HPE Support Services** HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support for need for your IT and business.

**Connect your devices** Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> 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 Hewlett Packard Enterprise support.

1- IDC 2 - HP CSC reports 2014 - 2015

### Recommended Support

#### **Standard: HPE Foundation Care 24x7, three-year Support Service**

HPE Foundation Care 24x7 gives you access to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. In addition, collaborative software support is included in this service that provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

#### **Optimized: 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 Hewlett Packard Enterprise, 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>

### Parts and Materials

Hewlett Packard Enterprise will provide Hewlett Packard Enterprise-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.

### Related Services

#### **HPE Server Hardware Installation**

Provides for the basic hardware installation of Hewlett Packard Enterprise 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 and startup of Hewlett Packard Enterprise technology including BladeSystems, C-Class enclosure, HPE ProLiant c-Class and Integrity server blades, storage blades, SAN switch blades, HPE Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and InfiniBand, as well as the installation of one supported operating system type (Windows® or Linux).

## Service and Support

### HPE Technology Services Support Credits

Offer 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.

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#### 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>

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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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise warranty, HPE Support Service or Hewlett Packard Enterprise contractual support agreement.

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

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

## Pre-configured Models

For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

1. Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
2. Hewlett Packard Enterprise does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
3. If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
4. Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

**NOTE:** All Pre-configured Models come populated with hard drive blanks installed. The 4LFF configurations includes 2 blanks and 8SFF includes 6 blanks. Additional hard drive blanks can be ordered using either P/N 666986-B21 for the HP LFF HDD Blank Kit or P/N 666987-B21 for the HP SFF HDD Blank Kit. These part numbers for single HDD blanks below are also provided should you require replacement HDD blanks for your server.

**NOTE:** 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 <https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html> web page.

**CAUTION:** 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.

|                      | Entry Models                                                                                                                               |                                                                            | Base Models                                                                       |                                                                                |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| [SKU Number]         | 776274-xx1                                                                                                                                 | 834606-xx1                                                                 | 776275-xx1                                                                        | 834607-xx1                                                                     |
| Model Name           | HP ProLiant ML150 Gen9 E5-2603v3 4GB B140i Non-hot Plug 4LFF SATA Entry 550W PS Server                                                     | HPE ProLiant ML150 Gen9 E5-2603v4 8GB-R B140i NHP 4LFF SATA 550W Entry Svr | HP ProLiant ML150 Gen9 E5-2609v3 8GB B140i Hot Plug 4LFF SATA Base 550W PS Server | HPE ProLiant ML150 Gen9 E5-2609v4 8GB-R B140i Hot Plug 4LFF SATA 550W Base Svr |
| Processor            | Intel® Xeon® E5-2603v3                                                                                                                     | Intel® Xeon® E5-2603v4                                                     | Intel® Xeon® E5-2609v3                                                            | Intel® Xeon® E5-2609v4                                                         |
| Number of Processors | One                                                                                                                                        |                                                                            |                                                                                   |                                                                                |
| Memory               | 4GB (1x4GB Registered DIMMs, 2133 MHz)                                                                                                     | 8GB (1x8GB Registered DIMMs, 2400 MHz)                                     | 8GB (1x8GB Registered DIMMs, 2133 MHz)                                            | 8GB (1x8GB Registered DIMMs, 2400 MHz)                                         |
| Network Controller   | Broadcom 5717 Dual-port 1GbE                                                                                                               |                                                                            |                                                                                   |                                                                                |
| Storage Controller   | HPE Dynamic Smart Array B140i                                                                                                              |                                                                            |                                                                                   |                                                                                |
| Hard Drive           | None ship standard                                                                                                                         |                                                                            |                                                                                   |                                                                                |
| Internal Storage     | 4 LFF HDD Bays (Non Hot Plug)                                                                                                              |                                                                            | 4 LFF HDD Bays                                                                    |                                                                                |
| Optical Drive Bay    | 1; (Optional: DVD-ROM, DVD-RW)                                                                                                             |                                                                            |                                                                                   |                                                                                |
| Optical Drive        | Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)                                                                                  |                                                                            |                                                                                   |                                                                                |
| PCI-Express Slots    | 6 PCIe slots                                                                                                                               |                                                                            |                                                                                   |                                                                                |
| Power Supply         | (1) HPE 550W FIO Power Supply                                                                                                              |                                                                            |                                                                                   |                                                                                |
| Fans                 | 2 non hot plug, non-redundant fans                                                                                                         |                                                                            |                                                                                   |                                                                                |
| Management           | iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Advanced (optional), HPE OneView (standard) |                                                                            |                                                                                   |                                                                                |
| Form Factor          | Tower (5U)                                                                                                                                 |                                                                            |                                                                                   |                                                                                |
| Warranty             | Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.                                |                                                                            |                                                                                   |                                                                                |

Pre-configured Models

|                      | Performance Models                                                                                                                                                 |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [SKU Number]         | 834608-xx1                                                                                                                                                         |
| Model Name           | HPE ProLiant ML150 Gen9 E5-2620v4 16GB-R H240 Hot Plug 8SFF SAS 900W Perf Svr                                                                                      |
| Processor            | Intel® Xeon® E5-2620v4                                                                                                                                             |
| Number of Processors | One                                                                                                                                                                |
| Memory               | 16GB (1x16GB Registered DIMMs, 2400 MHz)                                                                                                                           |
| Network Controller   | Broadcom 5717 Dual-port 1GbE                                                                                                                                       |
| Storage Controller   | HPE H240 Smart Host Bus Adapter<br><b>NOTE: HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.</b> |
| Hard Drive           | None ship standard                                                                                                                                                 |
| Internal Storage     | 8 SFF HDD Bays                                                                                                                                                     |
| Optical Drive Bay    | 1; (Optional: DVD-ROM, DVD-RW)                                                                                                                                     |
| Optical Drive        | Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)                                                                                                          |
| PCI-Express Slots    | 6 PCIe slots                                                                                                                                                       |
| Power Supply         | 900W AC 240VDC Power Supply                                                                                                                                        |
| Fans                 | 2 non hot plug, non-redundant fans                                                                                                                                 |
| Management           | iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional), iLO Scale-out (optional only for DL), iLO Advanced (optional)           |
| Form Factor          | Tower (5U)                                                                                                                                                         |
| Warranty             | Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.                                                        |

|                  |           |           |
|------------------|-----------|-----------|
| Country Code Key | xx1 = B21 | Worldwide |
|                  | xx1 = 001 | US        |
|                  | xx1 = 031 | UK        |
|                  | xx1 = 291 | Japan     |
|                  | xx1 = 371 | AP        |
|                  | xx1 = 421 | EU        |
|                  | xx1 = AA1 | PRC       |

**NOTE:** Not all models are available in all regions. Check with your local country Hewlett Packard Enterprise offices for availability.

## Configuration Information - Factory Integrated Models

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

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 the number of initial hard drives ordered with the server.
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)

| [Chassis]          | HP ProLiant ML150 Gen9 Non-hot Plug 4LFF Configure-to-order Server | HP ProLiant ML150 Gen9 Hot Plug 4LFF Configure-to-order Server | HP ProLiant ML150 Gen9 Hot Plug 8SFF Configure-to-order Server |
|--------------------|--------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| SKU Number         | 767062-B21                                                         | 767063-B21                                                     | 767064-B21                                                     |
| Processor          | 2 (optional) x HPE Smart Socket Guide                              |                                                                |                                                                |
| DIMM Slots         | 16 DIMM slots for RDIMM, LRDIMM DDR4 Memory                        |                                                                |                                                                |
| Storage Controller | HPE Dynamic Smart Array B140i                                      |                                                                |                                                                |
| PCIe               | 6 Standard (4FH/HL, 2FH/FL)                                        |                                                                |                                                                |
| Drive Cage         | 4LFF Non Hot Plug                                                  | 4LFF Hot Plug                                                  | 8SFF Hot Plug                                                  |
| Network Controller | Broadcom 5717 Dual-port 1GbE                                       |                                                                |                                                                |
| Fans               | 2 non hot plug, non-redundant fans                                 |                                                                |                                                                |
| Management         | iLO Management (standard), Intelligent Provisioning (standard)     |                                                                |                                                                |
| USB                | 2 front, 2 internal, 4 rear                                        |                                                                |                                                                |

### Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Select one or two processors from Core options-Processor section below,

- If one processor is desired, select one xxxxxx-L21
- If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.
- Up to 2 processors supported. Mixing different processor models is not supported.
- DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

Select one or more memory from Core options-Memory section below,

- LRDIMM, RDIMM are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen9 servers support LRDIMM and RDIMM.
- HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen9.
- If only one processor is installed, only half of the total DIMM slots are available. When populating with two processors all DIMM slots are available.
- Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <https://www.hpe.com/us/en/about/environment/eco-labels.html>.
- Depending on the memory configuration and processor model, the memory speed may run at 2133MHz, 1866MHz, 1600MHz or 1333MHz.

## Configuration Information - Factory Integrated Models

Select one or more power supplies from Core Options-Power Supplies section below:

- Prior to selecting a power supply option, it is highly recommended that you review your server configuration in the HPE Power Advisor tool to determine the right size power supply for your server configuration. The HPE Power Advisor is located at: <http://www.hpe.com/info/hppoweradvisor>.
- Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

### Step 3: Choose Additional Factory Integratable Options

Select a standup NIC adapter from Core options-Networking section below,

- Please see the QuickSpecs for Technical Specifications and additional information: <https://www.hpe.com/us/en/product-catalog/servers/server-adapters.hits-12.html>.
- These options are upgradeable and can be changed from the original configuration after the server is shipped.
- For 10Gb adapters, a minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

Select one or more drives from Core options-HPE Drives section below:

- The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
- Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
- The HPE ProLiant Gen9 Smart Storage solutions are equipped with re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HPE Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

Select one or more graphics adapter from Additional options section below.

- Please see the HPE Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HPE Power Advisor is located at: <http://www.hpe.com/info/hppoweradvisor>.
- This section may contain FIO options, please see HPE Computation & Graphics Accelerators section below.

Select one or more Unique options from Core options section below.

- This section may contain FIO options, please see the Unique options section below.
- FIO indicates that this option is only available as a factory installable option.

Select one or more Fan Kits from Core options section below.

- This section may contain FIO options, please see HPE Cooling Options section below.
- FIO indicates that this option is only available as a factory installable option.

Select one or more Storage options from Additional options section below.

- The embedded B140i controller will operate in UEFI only mode. For legacy support an additional controller will be needed, and for CTO orders please also select the Legacy mode settings part, 758959-B22
- This section may contain FIO options, please see HPE Storage Controllers section below.
- FIO indicates that this option is only available as a factory installable option.

## Core Options

**NOTE:** 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.

|                           |                                                                                                                                                                                                                        |            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>HPE Unique Options</b> | HP ML150 Gen9 4LFF Hot Plug Drive Cage                                                                                                                                                                                 | 725872-B21 |
|                           | <b>NOTE:</b> Adding 4LFF Hard Drive Cage allow up to 8FF Drive Bays.                                                                                                                                                   |            |
|                           | HP ML150 Gen9 8SFF Hot Plug Drive Cage                                                                                                                                                                                 | 725874-B21 |
|                           | <b>NOTE:</b> Adding 8SFF Hard Drive backplane allow up to 16SFF Drive Bays.                                                                                                                                            |            |
|                           | HP ML150 Gen9 4LFF Non-hot Plug Drive Cage                                                                                                                                                                             | 779859-B21 |
|                           | <b>NOTE:</b> Adding 4LFF Hard Drive Cage allow for up to 8LFF Drive Bays.                                                                                                                                              |            |
|                           | HP ML150 Gen9 PCI Baffle Kit                                                                                                                                                                                           | 779861-B21 |
|                           | <b>NOTE:</b> Must select when a PCIe card is installed with any Networking, Controllers (SAS, SCSI and Fiber Channel), and Graphic options.                                                                            |            |
|                           | <b>NOTE:</b> HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.                                                                                        |            |
|                           | HP ML150 Gen9 Slim ODD Enablement Kit                                                                                                                                                                                  | 784603-B21 |
|                           | <b>NOTE:</b> Must select with the ODD option.                                                                                                                                                                          |            |
|                           | HP ML150 Gen9 Smart Storage Battery Holder Kit                                                                                                                                                                         | 786710-B21 |
|                           | <b>NOTE:</b> Must select when install Smart Store Battery P/N: 727258-B21.                                                                                                                                             |            |
|                           | <b>NOTE:</b> Must select when install P440/840 FIO controller P/N: 761872-B21/761874-B21.                                                                                                                              |            |
|                           | <b>NOTE:</b> Must select when support upgrade battery.                                                                                                                                                                 |            |
|                           | HP ML150 Gen9 9/10LFF Drive Enablement Kit                                                                                                                                                                             | 788567-B21 |
|                           | <b>NOTE:</b> When populate 10 LFF, not able to install any Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD + 1 Tape Drive (Full/Half), or 2) 9LFF + 1 ODD, or 3) 9LFF + 1 Tape Drive (Full/Half). |            |
|                           | <b>NOTE:</b> 10LFF is limited to B140i controller.                                                                                                                                                                     |            |
|                           | <b>NOTE:</b> Must select both 4LFF NHPE drive cage and 10LFF enablement kit if plan to expand to 10LFF.                                                                                                                |            |
|                           | <b>NOTE:</b> Only support NHPE SATA HDD.                                                                                                                                                                               |            |
|                           | <b>NOTE:</b> Must select B140i controller.                                                                                                                                                                             |            |
|                           | HP ML150 Gen9 Dedicated iLO Management Port Kit                                                                                                                                                                        | 780310-B21 |
|                           | HP ML150 Gen9 Mini SAS H240 Cable Kit                                                                                                                                                                                  | 784606-B21 |
|                           | <b>NOTE:</b> Must be selected for H240 controller.                                                                                                                                                                     |            |
|                           | 1 cable kit is required for Hot Plug 4LFF.                                                                                                                                                                             |            |
|                           | 2 cable kits are required for below:                                                                                                                                                                                   |            |
|                           | - Hot Plug 4+4 LFF (with additional drive cage)                                                                                                                                                                        |            |
|                           | - 8 SFF                                                                                                                                                                                                                |            |
|                           | HP ML150 Gen9 Mini SAS P440/P840 Cable Kit                                                                                                                                                                             | 784608-B21 |
|                           | <b>NOTE:</b> Must be selected for P440/P840 controller.                                                                                                                                                                |            |
|                           | 1 cable kit is required for P440x1.                                                                                                                                                                                    |            |
|                           | 2 cable kits are required for P840x1.                                                                                                                                                                                  |            |
|                           | HP Tower to Rack Conversion Tray Universal Kit                                                                                                                                                                         | 417705-B21 |
|                           | HP AHCI-Enable FIO Setting                                                                                                                                                                                             | 801845-B21 |
|                           | <b>NOTE:</b> This needs to be selected when Advanced Host Controller Interface mode is required on B140i controller.                                                                                                   |            |
|                           | HP ML150 Gen9 GPU Enablement Kit                                                                                                                                                                                       | 779863-B21 |

## Core Options

| HPE Processors | E5-2600v4 series Processors                                                        |            |
|----------------|------------------------------------------------------------------------------------|------------|
|                | HPE ML150 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) Processor Kit       | 828355-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W) FIO Processor Kit   | 828355-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) Processor Kit       | 828356-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2609v4 (1.7GHz/8-core/20MB/85W) FIO Processor Kit   | 828356-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) Processor Kit       | 828357-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2603v4 (1.7GHz/6-core/15MB/85W) FIO Processor Kit   | 828357-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2650Lv4 (1.7GHz/14-core/35MB/65W) Processor Kit     | 828358-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2650Lv4 (1.7GHz/14-core/35MB/65W) FIO Processor Kit | 828358-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) Processor Kit     | 828361-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2630Lv4 (1.8GHz/10-core/25MB/55W) FIO Processor Kit | 828361-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) Processor Kit      | 828353-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2640v4 (2.4GHz/10-core/25MB/90W) FIO Processor Kit  | 828353-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) Processor Kit     | 828359-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2660v4 (2.0GHz/14-core/35MB/105W) FIO Processor Kit | 828359-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) Processor Kit     | 828360-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2650v4 (2.2GHz/12-core/30MB/105W) FIO Processor Kit | 828360-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) Processor Kit      | 828354-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2630v4 (2.2GHz/10-core/25MB/85W) FIO Processor Kit  | 828354-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) Processor Kit     | 860714-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2680v4 (2.4GHz/14-core/35MB/120W) FIO Processor Kit | 860714-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) Processor Kit     | 860715-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2683v4 (2.1GHz/16-core/40MB/120W) FIO Processor Kit | 860715-L21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) Processor Kit     | 860716-B21 |
|                | HPE ML150 Gen9 Intel® Xeon® E5-2695v4 (2.1GHz/18-core/45MB/120W) FIO Processor Kit | 860716-L21 |

## Core Options

### E5-2600v3 series Processors

|                                                                                   |            |
|-----------------------------------------------------------------------------------|------------|
| HP ML150 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) Processor Kit       | 726660-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2609v3 (1.9GHz/6-core/15MB/85W) FIO Processor Kit   | 726660-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) Processor Kit       | 726663-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2603v3 (1.6GHz/6-core/15MB/85W) FIO Processor Kit   | 726663-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) Processor Kit       | 726650-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2640v3 (2.6GHz/8-core/20MB/90W) FIO Processor Kit   | 726650-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) Processor Kit       | 726653-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2630v3 (2.4GHz/8-core/20MB/85W) FIO Processor Kit   | 726653-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) Processor Kit       | 726657-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2620v3 (2.4GHz/6-core/15MB/85W) FIO Processor Kit   | 726657-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2650Lv3 (1.8GHz/12-core/30MB/65W) FIO Processor Kit | 726667-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) Processor Kit     | 726644-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2660v3 (2.6GHz/10-core/25MB/105W) FIO Processor Kit | 726644-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) Processor Kit     | 726647-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2650v3 (2.3GHz/10-core/25MB/105W) FIO Processor Kit | 726647-L21 |
| HP ML150 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) Processor Kit      | 726670-B21 |
| HP ML150 Gen9 Intel® Xeon® E5-2630Lv3 (1.8GHz/8-core/20MB/55W) FIO Processor Kit  | 726670-L21 |

**NOTE:** Recommend to select 900W for 2P configurations or check power advisor for power consumption for the customer usage case.

### HPE Memory

#### Registered DIMMs (RDIMMs)

|                                                                                     |            |
|-------------------------------------------------------------------------------------|------------|
| HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit          | 726717-B21 |
| HP 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit | 803026-B21 |
| <b>NOTE:</b> Available WW except EMEA.                                              |            |
| HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit          | 726718-B21 |
| HP 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Registered Memory Kit            | 759934-B21 |
| HP 8GB (1x8GB) Single Rank x4 DDR4-2133 CAS-15-15-15 Registered Standard Memory Kit | 803028-B21 |

## Core Options

**NOTE:** Available WW except EMEA.

|                                                                                      |            |
|--------------------------------------------------------------------------------------|------------|
| HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit           | 726719-B21 |
| HP 32GB (1x32GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Registered Memory Kit           | 728629-B21 |
| HP 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Memory Kit           | 805347-B21 |
| HP 16GB (1x16GB) Single Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit         | 805349-B21 |
| HP 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit           | 805351-B21 |
| HPE 16GB (1x16GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Registered Memory Kit          | 836220-B21 |
| HPE 8GB (1x8GB) Single Rank x8 DDR4-2400 CAS-17-17-17 Registered Standard Memory Kit | 851353-B21 |

### Load Reduced DIMMs (LRDIMMs) for E5-2600v3 Series

|                                                                               |            |
|-------------------------------------------------------------------------------|------------|
| HP 16GB (1x16GB) Dual Rank x4 DDR4-2133 CAS-15-15-15 Load Reduced Memory Kit  | 726720-B21 |
| HPE 32GB (1x32GB) Dual Rank x4 DDR4-2400 CAS-17-17-17 Load Reduced Memory Kit | 805353-B21 |

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|                           |                                                               |            |
|---------------------------|---------------------------------------------------------------|------------|
| <b>HPE Optical Drives</b> | HP 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive            | 726536-B21 |
|                           | HP 9.5mm SATA DVD-RW JackBlack G9 Optical Drive               | 726537-B21 |
|                           | HP ML150 Gen9 Slim ODD Enablement Kit                         | 784603-B21 |
|                           | <b>NOTE:</b> Must be selected with the ODD option.            |            |
|                           | <b>NOTE:</b> Must select ODD enablement kit, one kit per ODD. |            |

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|                   |                                                                                                                                                                                                                    |  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>HPE Drives</b> | <b>NOTE:</b> 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. |  |
|                   | <b>NOTE:</b> If B140i is the primary controller, user can only select SATA drives.                                                                                                                                 |  |
|                   | <b>NOTE:</b> SAS drives require the selection of a SAS controller. See card lists in Controllers section.                                                                                                          |  |

### SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) 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 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD      | 870759-B21 |
| HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD | 870765-B21 |
| HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD      | 870757-B21 |
| HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD      | 872477-B21 |
| HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD      | 870753-B21 |

## Core Options

|                                                                                                |            |
|------------------------------------------------------------------------------------------------|------------|
| HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD          | 872475-B21 |
| <b>SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives</b>                                     |            |
| HPE 600GB SAS 12G Enterprise 15K LFF (3.5in) SC 3yr Wty HDD                                    | 765424-B21 |
| HPE 300GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty HDD                                   | 737261-B21 |
| <b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>                                        |            |
| HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD | 857644-B21 |
| HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD         | 819201-B21 |
| HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD  | 861590-B21 |
| HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 846514-B21 |
| HPE 1TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 846524-B21 |
| <b>SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>                                       |            |
| HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD | 881785-B21 |
| HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD | 857648-B21 |
| HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD  | 861594-B21 |
| HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD         | 819203-B21 |
| HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 846510-B21 |
| HPE 3TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 861693-B21 |
| HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD                                        | 861691-B21 |
| <b>SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives</b>                                       |            |
| HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD         | 765455-B21 |
| HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD                                   | 765466-B21 |
| HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD         | 765453-B21 |
| HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 655710-B21 |
| HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD         | 765464-B21 |
| HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD              | 832514-B21 |
| <b>SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>                                   |            |
| HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD                                        | 801888-B21 |
| HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) RW 1yr Wty HDD                                        | 801882-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) Read Intensive Solid State Drives</b>                       |            |
| HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD         | 870144-B21 |

## Core Options

|                                                                                        |            |
|----------------------------------------------------------------------------------------|------------|
| HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 872394-B21 |
| HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 875330-B21 |
| HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 872392-B21 |
| HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 875326-B21 |
| HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 872390-B21 |
| HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 875313-B21 |
| HPE 480GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 875311-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) Write Intensive Solid State Drives</b>              |            |
| HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 873357-B21 |
| HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 873355-B21 |
| HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 873351-B21 |
| <b>12G SAS Hot Plug SFF (2.5-inch) Mixed Use Solid State Drives</b>                    |            |
| HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 873367-B21 |
| HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 872386-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 873365-B21 |
| HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 872382-B21 |
| HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 873363-B21 |
| HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD      | 872378-B21 |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 873359-B21 |
| HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 872374-B21 |
| <b>12G SAS Hot Plug LFF (3.5-inch) Mixed Use Solid State Drives</b>                    |            |
| HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD      | 872378-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Read Intensive Solid State Drives</b>            |            |
| HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 877764-B21 |
| HPE 3.8TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 868830-B21 |
| HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 877758-B21 |
| HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 868826-B21 |

## Core Options

|                                                                                        |            |
|----------------------------------------------------------------------------------------|------------|
| HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 875513-B21 |
| HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 877752-B21 |
| HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 868822-B21 |
| HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 875511-B21 |
| HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 877746-B21 |
| HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 868818-B21 |
| HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 875509-B21 |
| HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 877740-B21 |
| HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 868814-B21 |
| HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD  | 875503-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Write Intensive Solid State Drives</b>           |            |
| HPE 800GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 872359-B21 |
| HPE 400GB SATA 6G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD | 872355-B21 |
| <b>6G SATA Hot Plug SFF (2.5-inch) SC Mixed Use Solid State Drives</b>                 |            |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD      | 877788-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD      | 872352-B21 |
| HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD      | 875478-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 877782-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 872348-B21 |
| HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 875474-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 877776-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 872344-B21 |
| HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 875470-B21 |
| HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 880295-B21 |
| HPE 240GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD       | 875483-B21 |
| <b>6G SATA Hot Plug LFF (3.5-inch) SC Read Intensive Solid State Drives</b>            |            |

## Core Options

HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 877760-B21

HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 877754-B21

HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 877748-B21

### 6G SATA Hot Plug LFF (3.5-inch) SC Mixed Use Solid State Drives

HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 877790-B21

HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 875480-B21

HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 877784-B21

HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 875476-B21

HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 872350-B21

HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 875472-B21

HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD 872346-B21

### Hard Drive Blank Kits

HPE Large Form Factor Hard Drive Blank Kit 666986-B21

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

## HPE Networking

### 1 Gigabit Ethernet adapters

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

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

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

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

### 10 Gigabit Ethernet adapters

HP Ethernet 10Gb 2-port 560SFP+ Adapter 665249-B21

HP Ethernet 10Gb 2-port 561T Adapter 716591-B21

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

## HPE Power Supplies

### HPE Entry-Level Power Supplies

HPE 550W Standard FIO Power Supply Kit 730941-B21

**NOTE:** The above power supply option is 80Plus Silver-certified with an efficiency rating of up to 89%. Power specifications and technical content for all HPE Server power supplies can be found at <http://www.hp.com/go/proliant/powersupply>.

HPE 900W Standard AC 240VDC Power Input Module 775595-B21

**NOTE:** This part number can only be bought standalone and is for field integration only.

**NOTE:** HPE 900W Gold (Redundant) AC 240VDC Power Input Module (775595-B21) must be used with Power Backplane (814835-B21).

HPE 900W Standard AC 240VDC RPS Power Backplane 814835-B21

**NOTE:** This part number can only be bought standalone and is for field integration only.

## Core Options

**NOTE:** This RPS backplane is mandatorily needed with 900W RPS input module.

**NOTE:** Each Redundant Power Supply Backplane can support up to two (2) power input modules.

**NOTE:** When purchase HPE 900W AC 240VDC RPS Power Backplane (814835-B21) + HPE 900W AC 240VDC Power Input Module (775595-B21), it supports 900W non-redundant PS.

HPE 900W Standard AC 240VDC Redundant Power Supply Kit 820792-B21

**NOTE:** This Redundant Power supply kit includes 2 power supply input module and 1 backplane kit.

**NOTE:** This part number is both factory installed option and field integratable option.

**NOTE:** Redundant AC Power Input Modules do not share power. Redundant AC Power Input Module #1 is the primary AC Power Input Module. Redundant AC Power Input Module #2 is the backup AC Power Input Module.

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same input voltage, output rating, and efficiency rating. If non-matching power supplies are installed, you may receive an error message and/or experience operational issues with your server.

**NOTE:** Recommend to select 900W for 2P configurations or check power advisor for power consumption for the customer usage case. Power specifications and technical content for all HPE Server power supplies can be found at <https://www.hpe.com/us/en/product-catalog/servers/power-supplies.hits-12.html>.

### HPE Computation and Graphics Accelerators

HP AMD FirePro W7100 Accelerator Kit JOH10A

**NOTE:** Must select HPE ML150 Gen9 GPU Enablement Kit (779863-B21) if W7100 Accelerator Kit (JOH10A) is selected.

HP ML150 Gen9 GPU Enablement Kit 779863-B21

**NOTE:** Only the above listed Graphics cards are HPE standard supported options in this server.

**NOTE:** The NVIDIA Quadro modules and AMD FirePro W7100 are supported only on 64-bit versions of Linux and Windows operating systems as well as on Virtual Machine client operating systems. The supported bare metal operating systems are RHEL6, SLES 11 and Windows Server 2012 R2.

**NOTE:** Please see the HPE Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HPE Power Advisor is located at: <http://www.hpe.com/info/hppoweradvisor>.

### HPE Cooling Options

HP ML150 Gen9 PCI Baffle Kit 779861-B21

**NOTE:** Must be selected when a PCIe card is installed with any Networking, Controllers (SAS, SCSI and Fiber Channel), and Graphic options.

**NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is included while order Performance Model with H240 Storage Controller.

## Additional Options

**NOTE:** 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.

|                            |                                                                                               |            |
|----------------------------|-----------------------------------------------------------------------------------------------|------------|
| <b>Embedded Management</b> | <b>HPE iLO Advanced</b>                                                                       |            |
|                            | HPE iLO Advanced including 3yr 24x7 Tech Support and Updates 1-server LTU                     | BD505A     |
|                            | HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU                       | E6U59ABE   |
|                            | HPE iLO Advanced including 1yr 24x7 Technical Support and Updates 1-server LTU                | 512485-B21 |
|                            | HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO LTU | C6N36A     |
|                            | HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU                       | E6U64ABE   |
|                            | HPE Insight Control including 1yr 24x7 Technical Support and Updates 1-server LTU             | C6N27A     |
|                            | HPE Insight Management Media Kit                                                              | C6N31A     |
|                            | <b>HPE iLO Essentials</b>                                                                     |            |
|                            | HPE iLO Essentials including 3yr 24x7 Tech Support and Updates 1-server LTU                   | BD774A     |
|                            | HPE iLO Essentials including 1yr 24x7 Tech Support and Updates 1-server LTU                   | BD775A     |
|                            | HPE iLO Essentials including 3yr 24x7 Technical Support and Updates E-LTU                     | E6U61ABE   |
|                            | HPE iLO Essentials including 1yr 24x7 Technical Support and Updates E-LTU                     | E6U62ABE   |

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>High Performance Clusters</b> | <b>HPE Insight Cluster Management Utility</b>                                                                                                                                                                                                                                                                                                                                                                                                      |        |
|                                  | HPE Insight Cluster Management Utility 3yr 24x7 Flexible LTU                                                                                                                                                                                                                                                                                                                                                                                       | BD476A |
|                                  | HPE Insight Cluster Management Utility 1yr 24x7 Flexible LTU                                                                                                                                                                                                                                                                                                                                                                                       | QL803B |
|                                  | <b>NOTE:</b> These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement. |        |
|                                  | HPE Insight Cluster Management Utility Media                                                                                                                                                                                                                                                                                                                                                                                                       | BD477A |

|                     |                                                                                                                                                                                                 |            |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>HPE Security</b> | HP Trusted Platform Module 2.0 Kit                                                                                                                                                              | 745823-B21 |
|                     | <b>NOTE:</b> HPE Trusted Platform Module 2.0 Option works with Gen9 servers with UEFI Mode not Legacy Mode. It is not compatible with HPE ProLiant Gen8 servers or earlier generation variants. |            |
|                     | <b>NOTE:</b> HPE Gen9 servers purchased earlier may need the latest firmware update to be compatible with the TPM 2.0 Option.                                                                   |            |
|                     | <b>NOTE:</b> HPE server systems can have a TPM module (of any type) installed only once. It cannot be replaced with any other TPM module.                                                       |            |

|                                |                                                                 |            |
|--------------------------------|-----------------------------------------------------------------|------------|
| <b>HPE Storage Controllers</b> | <b>SAS Controllers</b>                                          |            |
|                                | <b>HPE Smart Array Controllers</b>                              |            |
|                                | HP Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller     | 820834-B21 |
|                                | HP Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller     | 726821-B21 |
|                                | HP Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller    | 726825-B21 |
|                                | HP Smart Array P840/4GB FBWC 12Gb 2-ports Int SAS Controller    | 726897-B21 |
|                                | <b>NOTE:</b> 16SFF is limited to P840.                          |            |
|                                | HP Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller    | 726903-B21 |
|                                | HP Smart Array P440/4GB FBWC 12Gb 1-port Int FIO SAS Controller | 761872-B21 |

**NOTE:** Smart Storage Battery included.

## Additional Options

**NOTE:** Must select battery holder P/N: 786710-B21 when purchasing the P440.

**NOTE:** B140i can't mix with any standup internal controller.

**NOTE:** HPE ML150 Gen9 Mini SAS P440/P840 Cable Kit must be selected P/N: 784606-B21 for P440 controller (1 cable kit is required for P440x1).

**NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is required when ordering the H240 controller card.

HP Smart Array P840/4GB FBWC 12Gb 2-ports Int FIO SAS Controller 761874-B21

**NOTE:** Smart Storage Battery included.

**NOTE:** B140i can't mix with any standup internal controller.

**NOTE:** Must select the P840/4G FIO Controller when an additional drive cage is selected.

**NOTE:** Must select P840/4G Controller when apply 16SFF.

**NOTE:** Must select battery holder when purchase P440 P/N: 786710-B21.

**NOTE:** HPE ML150 Gen9Mini SAS P440/P840 Cable Kit must be selected P/N: 784606-B21 for P840 controller (2 cable kits are required for P840x1).

**NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is required when ordering a controller card.

### SAS Controller Options

HP 96W Smart Storage Battery with 145mm Cable for DL/ML/SL Servers 727258-B21

### HPE Host Bus Adapter

HP H240 12Gb 2-ports Int Smart Host Bus Adapter 726907-B21

HP H241 12Gb 2-ports Ext Smart Host Bus Adapter 726911-B21

HP H240 12Gb 2-ports Int FIO Smart Host Bus Adapter 761873-B21

**NOTE:** Must select for H240 controller when selecting a Tape Drive.

**NOTE:** Cable Rule:

1 cable kit is required for Hot Plug 4LFF.

2 cable kits are required for below:

- Hot Plug 4+4 LFF (with additional drive cage)

- 8SFF

**NOTE:** If H240 is the primary controller and if HPE Mfg FIO Enable HBA Mode Setting is selected, then RAID is not allowed.

**NOTE:** B140i can't mix with any standup internal controller.

**NOTE:** HPE ML150 Gen9 PCI BAFFLE Kit (779861-B21) is required when ordering a controller card.

### HPE Cable Options

HP ML150 Gen9 Mini SAS H240 Cable Kit 784606-B21

HP ML150 Gen9 Mini SAS P440/P840 Cable Kit 784608-B21

### Optional Software

HPE SmartCache No Media 24x7 Technical Support 1-server LTU D7S26A

HPE SmartCache No Media 24x7 Technical Support Flexible LTU D7S27A

HPE SmartCache No Media 24x7 Technical Support E-LTU D7S27AAE

**NOTE:** HPE SmartCache is supported when one of the supported Smart Array Controllers is installed in the server.

**NOTE:** HPE SmartCache comes standard (no licensing is required) if the HPE Smart Array P840 Controller is installed in the server.

### Battery Holder

HP ML150 Gen9 Smart Storage Battery Holder Kit 786710-B21

## Additional Options

### HPE Tape Backup

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: <https://www.hpe.com/us/en/storage/storeever-tape-storage.html>. For hardware and software compatibility of HPE tape backup products <http://www.hpe.com/storage/BURAcompatibility>.  
**NOTE:** Must select SAS controller to support internal SAS tape drives.  
**NOTE:** Tape drive and HDD total amount can't exceed SAS controller support qty.  
**NOTE:** Limited to H240 when select Tape Drive.

#### Tape Drives

|                                                                                 |        |
|---------------------------------------------------------------------------------|--------|
| HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive                           | BB874A |
| HPE StoreEver LTO-7 Ultrium 15000 Internal Tape Drive                           | BB873A |
| HPE StoreEver LTO-6 Ultrium 6250 Tape Drive in a 1U Rack Mount Kit              | COL99A |
| HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive                            | EH970A |
| HPE StoreEver LTO-6 Ultrium 6250 Internal Tape Drive                            | EH969A |
| HPE StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in a 1U Rack Mount Kit          | EJ014B |
| HPE StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive                        | EH958B |
| HPE StoreEver LTO-5 Ultrium 3000 SAS Internal Tape Drive                        | EH957B |
| HPE StoreEver LTO-4 Ultrium 1760 SAS (1) in a 1U Rack Mount Kit                 | EH946C |
| HPE StoreEver LTO-4 Ultrium 1760 SAS External Tape Drive                        | EH920B |
| HPE StoreEver LTO-4 Ultrium 1760 SAS Internal WW Tape Drive                     | EH919B |
| HPE StoreEver 1U SAS Rack Mount Kit                                             | AE459B |
| HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable | K2R09A |
| HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable | K2R10A |

#### HPE Tape Storage Systems HPE StoreEver MSL6480

|                                                  |        |
|--------------------------------------------------|--------|
| HPE StoreEver MSL6480 Scaleable Expansion Module | QU626A |
| HPE StoreEver MSL6480 Scalable Base Module       | QU625A |
| HPE StoreEver MSL2024 0-drive Tape Library       | AK379A |
| HPE StoreEver MSL4048 0-drive Tape Library       | AK381A |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: <https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111416>.

### HPE Disk Backup

#### HPE RDX Removable Disk Backup System

|                                                  |        |
|--------------------------------------------------|--------|
| HPE RDX500 USB3.0 Internal Disk Backup System    | B7B64A |
| HPE RDX1000 USB3.0 Internal Disk Backup System   | B7B67A |
| HPE RDX USB 3.0 Internal Docking Station         | C8S06A |
| HPE RDX 2TB USB3.0 Internal Disk Backup System   | E7X52A |
| HPE RDX 3TB USB 3.0 Internal Disk Backup System  | P9L71A |
| HPE RDX 4TB USB 3.0 Internal Disk Backup System  | Q2R32A |
| HPE RDX+ External Docking System                 | C8S07B |
| HP RDX+ 500GB External Backup System             | B7B66B |
| HP RDX+ 1TB External Backup System               | B7B69B |
| HP RDX 2TB USB3.0 External Disk Backup System    | E7X53B |
| HPE RDX+ 3TB USB 3.0 External Disk Backup System | P9L72A |
| HPE RDX 4TB USB 3.0 External Disk Backup System  | Q2R33A |

**NOTE:** For the complete range of RDX drives and media see: <https://www.hpe.com/us/en/product-catalog/storage/disk-based-backup-systems/pip.hpe-rdx-removable-disk-backup-system.3741006.html>. For hardware and software compatibility of HPE disk backup products see: <http://www.hpe.com/storage/spock>

## Additional Options

| HPE Power Distribution Units (PDUs) | HPE Basic Power Distribution Units (PDU)                                                        |            |
|-------------------------------------|-------------------------------------------------------------------------------------------------|------------|
|                                     |                                                                                                 |            |
|                                     | HPE Basic 1.9kVA/L5-20P 16A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU                        | H5M54A     |
|                                     | HPE Basic 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU               | H5M56A     |
|                                     | HPE Basic 2.8kVA/L5-30P 24A/120V Outlets (18) 5-20R/Vertical NA/JP PDU                          | H5M55A     |
|                                     | HPE Basic 4.9kVA/60320 C20 Detachable 16A/230V Outlets (20) C13/Vertical WW PDU                 | H5M57A     |
|                                     | HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (20) C13/Vertical NA/JP PDU                            | H5M58A     |
|                                     | HPE Basic 7.3kVA/60309 5-wire 32A/230V Outlets (20) C13/Vertical INTL PDU                       | H5M68A     |
|                                     | HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU                       | H5M61A     |
|                                     | HPE Basic 4.9kVA/L6-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU                    | H5M59A     |
|                                     | HPE Basic 7.3kVA/60309 3-wire 32A/230V Outlets (24) C13 (6) C19/Vertical INTL PDU               | H5M70A     |
|                                     | HPE Basic 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (6) C19/Vertical NA PDU                      | H5M60A     |
|                                     | HPE Basic 11kVA/60309 63A 3-wire 48A/230V Outlets (30) C13 (6) C19/Vertical INTL PDU            | H5M71A     |
|                                     | HPE Basic 9.2kVA/50A Terminal Block 40A/230V Outlets (30) C13 (6) C19/Vertical WW PDU           | H5M75A     |
|                                     | HPE Basic 3Ph 5.7kVA/ L21-20P 16A/120-208V Outlets (24) C13 (3) 5-20R/Vertical NA/JP PDU        | H5M63A     |
|                                     | HPE Basic 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (24) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU | H5M64A     |
|                                     | HPE Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (24) C13 (6) C19/Vertical NA/JP PDU               | H5M62A     |
|                                     | HPE Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (24) C13 (6) C19/Vertical INTL PDU            | H5M72A     |
|                                     | HPE Basic 3Ph 11kVA/60309 5-wire 16A/230V Outlets (36) C13 (6) C19/Vertical INTL PDU            | H5M73A     |
|                                     | HPE Basic 3Ph 11kVA/60309 16A/240V Outlets (36) C13 (6) C19/Vertical NA PDU                     | H5M67A     |
|                                     | HPE Basic Modular 2.8kVA/L5-30P 24A/120V Outlets (4) C19/Horizontal NA/JP PDU                   | 252663-D71 |
|                                     | HPE Basic Modular 4.9kVA/L6-30P 24A/208V Outlets (4) C19/Horizontal NA/JP Core Only PDU         | 252663-D74 |
|                                     | HPE Basic Modular 8.3kVA/CS8265C 40A/208V Outlets (4) C19/Horizontal NA/JP PDU                  | 252663-D75 |
|                                     | HPE Basic Modular 7.3kVA/60309 3-wire 32A/230V Outlets (4) C19/Horizontal INTL Core Only PDU    | 252663-B33 |
|                                     | HPE Basic Modular 9.2kVA/60309 63A 3-wire 40A/230V Outlets (4) C19/Horizontal INTL PDU          | 252663-B34 |
|                                     | HPE Basic Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU              | AF512A     |
|                                     | HPE Basic Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/Horizontal INTL PDU           | AF513A     |
|                                     | HPE Basic Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU             | AF519A     |
|                                     | HPE Basic Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (6) C19/Horizontal NA/JP PDU    | AF511A     |
|                                     | HPE Basic Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU           | AF518A     |

## Additional Options

|                                                                                                                                                                   |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer                                                                                                     | H3X09A |
| <b>NOTE: Please see the <a href="#">HPE Basic Power Distribution Units (PDU) QuickSpecs</a> for information on additional options and product specifications.</b> |        |
| <b>HPE Metered Power Distribution Units (PDU)</b>                                                                                                                 |        |
| HPE Metered 2.8kVA/L5-30P 24A/120V Outlets (12) 5-20R/Horizontal NA/JP PDU                                                                                        | D9N43A |
| HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (12) C13/Horizontal WW PDU                                                                               | D9N46A |
| HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Horizontal NA/JP PDU                                                                                          | D9N44A |
| HPE Metered 3.6kVA/60320 C20 Detachable 16A/230V Outlets (16) C13/Vertical WW PDU                                                                                 | D9N45A |
| HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (12) C13/Vertical NA/JP PDU                                                                                            | G9Z05A |
| HPE Metered 7.3kVA/60309 3-wire 32A/230V Outlets (12) C13/Vertical INTL PDU                                                                                       | G9Z06A |
| HPE Metered 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU                                                                                    | D9N47A |
| HPE Metered 7.3kVA/60309 32A 3-wire/230V Outlets (20) C13 (4) C19/Vertical INTL PDU                                                                               | D9N48A |
| HPE Metered 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (3) C19/Vertical NA/JP PDU                                                                               | D9N51A |
| HPE Metered 3Ph 8.6kVA/L21-30P 24A/120-208V Outlets (18) C13 (3) C19 (3) 5-20R/Vertical NA/JP PDU                                                                 | D9N53A |
| HPE Metered 3Ph 11kVA/60309 5-wire 16A/230V Outlets (18) C13 (3) C19/Vertical INTL PDU                                                                            | D9N55A |
| HPE Metered 8.3kVA/CS8265C 40A/208V Outlets (30) C13 (3) C19/Vertical NA PDU                                                                                      | D9N49A |
| HPE Metered 7.3kVA/60309 32A 3-wire/230V Outlet (32) C13 (4) C19/Vertical INTL PDU                                                                                | D9N50A |
| HPE Metered 3Ph 11kVA/60309 5-wire 16A/230V Outlets (30) C13 (3) C19/Vertical INTL PDU                                                                            | D9N57A |
| HPE Metered 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU                                                                             | D9N58A |
| HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (30) C13 (3) C19/Vertical NA/JP PDU                                                                 | D9N61A |
| HPE Metered 3Ph 16.6kVA/60309 32A-30A 5-wire 24A/230V Outlets (12) C13 (12) C19/Vertical NA/JP PDU                                                                | D9N62A |
| HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (24) C13 (3) C19/Vertical NA/JP PDU                                                                     | D9N54A |
| HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU                                                                    | D9N59A |
| HPE Metered 3Ph 17.3kVA/60309 60A 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU                                                                    | G9Z07A |
| HPE Metered 3Ph 19.9kVA/L22-30P 24A/277V Outlets (30) RF-203P-HP/Vertical NA PDU                                                                                  | D9N63A |
| HPE Metered 3Ph 22kVA/60309 5-wire 32A/230V Outlet (30) C13 (3) C19/Vertical INTL PDU                                                                             | D9N56A |
| HPE Metered 3Ph 22kVA/60309 5-wire 32A/230V Outlets (12) C13 (12) C19/Vertical INTL PDU                                                                           | D9N60A |
| HPE Metered 3Ph 22kVA/60309 5-wire WT 32A/230V Outlets (12) C13 (12) C19/Vertical INTL PDU                                                                        | G9Z08A |
| HP Environmental Sensor for Remote Monitored and Managed PDUs                                                                                                     | E2D53A |

## Additional Options

**NOTE:** Please see the [HPE Metered Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

### HPE Intelligent Power Distribution Unit (PDU)

|                                                                                                   |        |
|---------------------------------------------------------------------------------------------------|--------|
| HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU               | AF520A |
| HPE Intelligent Modular 8.3kVA/CS8265C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU              | AF521A |
| HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (6) C19/Horizontal NA/JP PDU          | AF522A |
| HPE Intelligent Modular 3Ph 17.3kVA/60309 60A 4-wire 48A/208V (6) C19/Horizontal NA/JP PDU        | AF523A |
| HPE Intelligent Modular 3Ph 17.3kVA/60309 30A 5-wire 24A/240V (6) C19/Horizontal NA/JP PDU        | AF901A |
| HPE Intelligent Modular 7.3kVA/60309 3-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU          | AF525A |
| HPE Intelligent Modular 3Ph 11kVA/60309 5-wire 16A/230V Outlets (6) C19/Horizontal INTL PDU       | AF526A |
| HPE Intelligent Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU       | AF527A |
| HPE Intelligent Modular 3Ph 17.3kVA/IEC 60309 60A 4-wire 48A/208V (12) C19/Horizontal NA/JP PDU   | AF535A |
| HPE Intelligent Modular 3Ph 22kVA/60309 5-wire 32A/230V Outlets (12) C19/Horizontal INTL PDU      | AF538A |
| HPE Intelligent Modular 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU      | AF531A |
| HPE Intelligent Modular 3Ph 8.6kVA/L15-30P 24A/208V Outlets (20) C13 (6) C19/Horizontal NA/JP PDU | AF532A |
| HPE Intelligent Modular 3Ph 14.4kVA/CS8365C 40A/208V Outlets (6) C19/Horizontal NA/JP PDU         | AF533A |
| HPE Intelligent Modular 7.3kVA/60309 3-wire 32A/230V Outlets (6) C19/Horizontal INTL PDU Kit      | AF534A |
| HP 5xC13 Intelligent PDU Extension Bar G2 Kit                                                     | AF547A |
| HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar                                   | AF528A |

**NOTE:** Please see the [HPE Intelligent Power Distribution Unit \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

### HPE Metered and Switched Power Distribution Units (PDU)

|                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------|--------|
| HPE Metered Switched 2.8kVA/L5-30P 24A/120V Outlets (24) 5-20R /Vertical NA/JP PDU                  | H8B48A |
| HPE Metered Switched 3.6kVA/60320 C20 Detachable 16A/230V Outlets (7) C13 (1) C19/Vertical WW PDU   | H8B49A |
| HPE Metered Switched 4.9kVA/L6-30P 24A/208V Outlets (20) C13 (4) C19/Vertical NA/JP PDU             | H8B50A |
| HPE Metered Switched 7.3kVA/60309 3-wire 32A/230V Outlets (20) C13 (4) C19/Vertical INTL PDU        | H8B51A |
| HPE Metered Switched 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13 (6) C19/Vertical NA/JP PDU        | H8B52A |
| HPE Metered Switched 3Ph 8.6kVA/L21-30P 24A/208V Outlets (20)C13 (3)C19 (1)5-20R/Vertical NA/JP PDU | H8B53A |
| HPE Metered Switched 3Ph 11kVA/60309 5-wire 16A/230V Outlets (21) C13 (3) C19/Vertical INTL PDU     | H8B54A |
| HPE Metered Switched 3Ph 14.4kVA/CS8365C 40A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU      | H8B55A |

## Additional Options

HPE Metered Switched 3Ph 17.3kVA/60309 4-wire 48A/208V Outlets (12) C13 (12) C19/Vertical NA/JP PDU H8B56A

**NOTE:** Please see the [HPE Metered and Switched Power Distribution Units \(PDU\) QuickSpecs](#) for information on additional options and product specifications.

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

### HPE Rack Mount Consoles, KVM Switches, and Keyboards

#### HPE Location Discovery Services

HPE Location Discovery Services LCD8500 Kit TL052A

**NOTE:** Please see the [HPE Location Discovery Services QuickSpecs](#) for information on additional options and product specifications.

#### HPE Rack Mount Consoles

|                                            |        |
|--------------------------------------------|--------|
| HP LCD8500 1U US Rackmount Console Kit     | AF630A |
| HP LCD8500 1U UK Rackmount Console Kit     | AF631A |
| HP LCD8500 1U DE Rackmount Console Kit     | AF632A |
| HP LCD8500 1U FR Rackmount Console Kit     | AF633A |
| HP LCD8500 1U JP Rackmount Console Kit     | AF642A |
| HP LCD8500 1U RU Rackmount Console Kit     | AF643A |
| HP LCD8500 1U INTL Rackmount Console Kit   | AF644A |
| HP LCD8500 1U US TAA Rackmount Console Kit | AF645A |

#### HPE KVM Switches

|                                                                        |        |
|------------------------------------------------------------------------|--------|
| HP 0x1x8 G3 KVM Console Switch                                         | AF651A |
| HP 0x2x16 G3 KVM Console Switch                                        | AF652A |
| HP TAA 0x2x16 G3 KVM Console Switch                                    | AF653A |
| HP USB Remote Access Key for G3 KVM Console Switches                   | AF650A |
| HP KVM Console USB Interface Adapter                                   | AF628A |
| HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software | AF618A |
| HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software | AF619A |
| HP KVM Console USB 2.0 Virtual Media CAC Interface Adapter             | AF629A |
| HP 1x4 USB/PS2 KVM Console Switch                                      | AF611A |
| HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software     | AF620A |
| HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software    | AF621A |
| HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software    | AF622A |

**NOTE:** To learn more, please visit the [HPE KVM Switches web page](#).

#### HPE USB Keyboard and Mouse

|                                                  |            |
|--------------------------------------------------|------------|
| HP USB BFR with PVC Free US Keyboard/Mouse Kit   | 631341-B21 |
| HP USB BFR with PVC Free Intl Keyboard/Mouse Kit | 672097-B33 |
| HP USB BFR with PVC Free UK Keyboard/Mouse Kit   | 631344-B21 |
| HP USB BFR with PVC Free FR Keyboard/Mouse Kit   | 631346-B21 |
| HP USB BFR with PVC Free ES Keyboard/Mouse Kit   | 631348-B21 |
| HP USB BFR with PVC Free DE Keyboard/Mouse Kit   | 631358-B21 |
| HP USB BFR with PVC Free JP Keyboard/Mouse Kit   | 631360-B21 |
| HP USB BFR with PVC Free IT Keyboard/Mouse Kit   | 631362-B21 |
| HP USB BFR with PVC Free CN Keyboard/Mouse Kit   | 631364-B21 |
| HP USB BFR with PVC Free AE Keyboard/Mouse Kit   | 638212-B21 |
| HP USB BFR with PVC Free RU Keyboard/Mouse Kit   | 638214-B21 |
| HP USB BFR with PVC Free SE Keyboard/Mouse Kit   | 672097-103 |
| HP USB BFR with PVC Free CH Keyboard/Mouse Kit   | 672097-113 |
| HP USB BFR with PVC Free PT Keyboard/Mouse Kit   | 672097-133 |
| HP USB BFR with PVC Free TR Keyboard/Mouse Kit   | 672097-143 |
| HP USB BFR with PVC Free CZ Keyboard/Mouse Kit   | 672097-223 |

## Additional Options

|                                                     |            |
|-----------------------------------------------------|------------|
| HP USB BFR with PVC Free FI Keyboard/Mouse Kit      | 672097-353 |
| HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit | 672097-373 |
| HP USB BFR with PVC Free IN Keyboard/Mouse Kit      | 672097-D63 |
| HP USB BFR with PVC Free KR Keyboard/Mouse Kit      | 672097-KD3 |

### HPE Other Options

|                                                |            |
|------------------------------------------------|------------|
| HPE Rack LED Light Kit                         | BW939A     |
| HP Kit LCD 1.83m Latch Display Port Cable      | G7T29A     |
| HP ConvergedSystem Door Branding Kit           | TK815A     |
| HP ConvergedSystem Rack Light Kit              | TK816A     |
| HP ConvergedSystem Rack Side Panel 1075mm Kit  | TK817A     |
| HP Tower to Rack Conversion Tray Universal Kit | 417705-B21 |

## HPE Uninterruptible HPE DirectFlow Three Phase UPS

### Power Systems (UPS)

#### Power Unit (1U UPS)

|                                                                       |        |
|-----------------------------------------------------------------------|--------|
| HPE R12000 DirectFlow - 1U Rackmount Uninterruptible Power System     | G9Y75A |
| HPE R12000 DirectFlow - POD 1U Rackmount Uninterruptible Power System | AF478A |

#### Input/Output Module Options for 1U UPS

|                                                                                           |        |
|-------------------------------------------------------------------------------------------|--------|
| HPE 32A 400-415 Volt Three Phase INTL R12000 DirectFlow UPS IEC309 Input/Output Module    | AF488A |
| HPE 30A 400-415 Volt Three Phase NA R10000 DirectFlow UPS IEC309 Input/Output Module      | AF489A |
| HPE 32A 380 Volt Three Phase China R12000 DirectFlow UPS Unterminated Input/Output Module | AF490A |
| HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS L22-30 Input/Output Module          | AF491A |
| HPE 30A 480 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module          | AF492A |
| HPE 30A 400-415 Volt Three Phase NA R12000 DirectFlow UPS IEC309 Input/Output Module      | G9Y76A |

#### Power Unit (2U UPS)

|                                                                   |        |
|-------------------------------------------------------------------|--------|
| HPE R18000 DirectFlow - 2U Rackmount Uninterruptible Power System | AF479A |
|-------------------------------------------------------------------|--------|

#### Input/Output Module Options for 2U UPS

|                                                                                           |        |
|-------------------------------------------------------------------------------------------|--------|
| HPE 32A 400-415 Volt Three Phase INTL R18000 DirectFlow UPS IEC309 Input/Output Module    | AF483A |
| HPE 30A 380 Volt Three Phase China R18000 DirectFlow UPS Unterminated Input/Output Module | AF485A |
| HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module          | AF486A |
| HPE 30A 480 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module          | AF487A |
| HPE 30A 400 Volt Three Phase NA R18000 DirectFlow UPS IEC309 Input/Output Module          | D9Q02A |
| HPE 30A 400-415V Three Phase NA R18000 DirectFlow UPS 1:1 IEC309 Input/Output Module      | AF484A |

**NOTE:** All Input/Output Modules support dual output outlets except the AF484A.

#### Battery Pack Options

|                                                            |        |
|------------------------------------------------------------|--------|
| HPE DirectFlow UPS - 1U Rackmount Lithium-ion Battery Pack | AF480A |
| HPE DirectFlow UPS - 3U Rackmount VRLA Battery Pack        | AF482A |
| HPE WW DirectFlow Secondary Battery Cable                  | AF497A |

**NOTE:** Please see the [HPE DirectFlow Three Phase Uninterruptible Power System QuickSpecs](#) for information on additional options and product specifications.

## Additional Options

### HPE Tower UPS

#### HPE T750 G4 UPS Models

|                                                |        |
|------------------------------------------------|--------|
| HPE T750 G4 NA/JP Uninterruptible Power System | J2P85A |
| HPE T750 G4 INTL Uninterruptible Power System  | J2P88A |

#### HPE T1000 G4 UPS Models

|                                                 |        |
|-------------------------------------------------|--------|
| HPE T1000 G4 NA/JP Uninterruptible Power System | J2P86A |
| HPE T1000 G4 INTL Uninterruptible Power System  | J2P89A |

#### HPE T1500 G4 UPS Models

|                                                 |        |
|-------------------------------------------------|--------|
| HPE T1500 G4 NA/JP Uninterruptible Power System | J2P87A |
| HPE T1500 G4 INTL Uninterruptible Power System  | J2P90A |

### HPE Rack/Tower UPS

#### HPE R/T2200 G4 UPS Models

|                                                   |        |
|---------------------------------------------------|--------|
| HPE R/T2200 G4 NA/JP Uninterruptible Power System | J2R00A |
|---------------------------------------------------|--------|

#### HPE R/T3000 G4 UPS Models

|                                                                |        |
|----------------------------------------------------------------|--------|
| HPE R/T3000 G4 Low Voltage NA/JP Uninterruptible Power System  | J2R01A |
| HPE R/T3000 G4 High Voltage NA/JP Uninterruptible Power System | J2R02A |
| HPE R/T3000 G4 High Voltage INTL Uninterruptible Power System  | J2R04A |

#### R1500 G4 Models

|                                                  |        |
|--------------------------------------------------|--------|
| HPE R1500 G4 NA Uninterruptible Power System     | J2Q99A |
| HPE R1500 G4 JP/TWN Uninterruptible Power System | J2R05A |
| HPE R1500 G4 INTL Uninterruptible Power System   | J2R03A |

#### R7000 Uninterruptible Power System (UPS)

|                                                                     |        |
|---------------------------------------------------------------------|--------|
| HPE R7000 4U 50A High Voltage NA/JP Uninterruptible Power System    | AF462A |
| HPE R7000 4U IEC-32A High Voltage INTL Uninterruptible Power System | AF463A |

#### R5000 Uninterruptible Power System (UPS)

|                                                                        |        |
|------------------------------------------------------------------------|--------|
| HPE R5000 3U L630 High Voltage NA/JP Uninterruptible Power System      | AF460A |
| HPE R5000 3U IEC309-32A High Voltage INTL Uninterruptible Power System | AF461A |

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

### HPE USB and SD Options

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

|                                                            |            |
|------------------------------------------------------------|------------|
| HPE 32GB microSD Mainstream Flash Media Kit                | 700139-B21 |
| HPE 8GB microSD Enterprise Mainstream Flash Media Kit      | 726116-B21 |
| HP 8GB USB Enterprise Mainstream Flash Media Drive Key Kit | 737953-B21 |
| HP Dual 8GB microSD Enterprise Midline USB Kit             | 741279-B21 |

### HPE Support Services

#### Installation & Start-up Services

|                                       |        |
|---------------------------------------|--------|
| HPE Installation ML350e/ML150 Service | U6D41E |
| HPE Startup ML350e/ML150 Service      | U6D43E |

#### Foundation Care

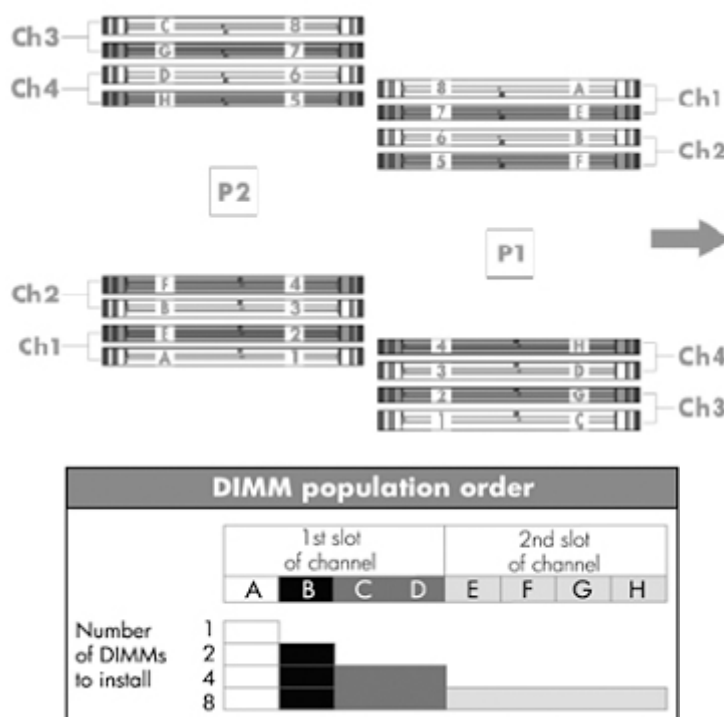
|                                                          |        |
|----------------------------------------------------------|--------|
| HPE 3 year Foundation Care 24x7 ML150 Gen9 Service       | U7WR1E |
| HPE 3 year Foundation Care 24x7 wDMR ML150 Gen9 Service  | U7WR2E |
| HPE 3 year Foundation Care 24x7 wCDMR ML150 Gen9 Service | U7WR3E |

#### Proactive Care

|                                                             |        |
|-------------------------------------------------------------|--------|
| HPE 3 year Proactive Care 24x7 ML150 Gen9 Service           | U7WT8E |
| HPE 3 year Proactive Care 24x7 with DMR ML150 Gen9 Service  | U7WT9E |
| HPE 3 year Proactive Care 24x7 with CDMR ML150 Gen9 Service | U7WU0E |

## Memory

### Memory Population guidelines



#### 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 and load the channels similarly whenever possible.
- 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.
- Place the DIMMs with the highest number of ranks in the white slot when mixing DIMMs of different ranks on the same channel.
- Do not mix RDIMMs or LRDIMMs.
- Quad rank RDIMMs are not supported in HPE ProLiant ML150 Gen9 servers.
- Quad rank LRDIMMs are capable of up to three DIMMs per channel.
- RDIMMs operating at 1.2V.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- 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 memory type and number of installed processors.
- To realize the performance memory capabilities listed in this document, HPE SmartMemory is required.
- There are four (4) channels per processor; eight (8) channels per server. There are three (2) DIMM slots for each memory channel; twenty-four (16) total slots. Memory channels 1 and 3 consists of the two (2) DIMMs that are furthest from the processor. Memory channel 2 and 4 consists of the two (2) DIMMs that are closest to the processor.

## Memory

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E5-2600v4 Series Processor Family

| Memory Bandwidth and Capacity |                           |                  |                  |                  |                        |
|-------------------------------|---------------------------|------------------|------------------|------------------|------------------------|
| [DIMM Type]                   | Registered DIMMs (RDIMMs) |                  |                  |                  | Load Reduced (LRDIMMs) |
| HPE SKU P/N                   | 805347-B21                | 805349-B21       | 836220-B21       | 805351-B21       | 805353-B21             |
| DIMM Rank                     | Single Rank               | Single Rank      | Dual Rank        | Dual Rank        | Dual Rank              |
| DIMM Capacity                 | 8GB                       | 16GB             | 16GB             | 32GB             | 32GB                   |
| Voltage                       | Std Voltage 1.2V          | Std Voltage 1.2V | Std Voltage 1.2V | Std Voltage 1.2V | Std Voltage 1.2V       |
| DRAM Depth [bit]              | 1G                        | 2G               | 1G               | 2G               | 2G                     |
| DRAM Width [bit]              | x8                        | x4               | x4               | x4               | x4                     |
| DRAM Density                  | 8Gb                       | 8Gb              | 4Gb              | 8Gb              | 8Gb                    |
| CAS Latency                   | 17-17-17                  | 17-17-17         | 17-17-17         | 17-17-17         | 17-17-17               |
| DIMM Native Speed (MT/s)      | 2400                      | 2400             | 2400             | 2400             | 2400                   |
| SLOTS THAT CAN BE POPULATED   |                           |                  |                  |                  |                        |
| 16 slot servers               | 16                        | 16               | 16               | 16               | 16                     |
| MAXIMUM CAPACITY (GB)         |                           |                  |                  |                  |                        |
|                               | 128                       | 256              | 256              | 512              | 512                    |
| POPULATED DIMM SPEED (MT/s)   |                           |                  |                  |                  |                        |
| 1 DIMM Per Channel            | 2400                      | 2400             | 2400             | 2400             | 2400                   |
| 2 DIMM Per Channel            | 2133                      | 2133             | 2133             | 2133             | 2400                   |
| 3 DIMM Per Channel            | n/a                       | n/a              | n/a              | n/a              | n/a                    |

#### DIMM slot and configuration diagram

#### DIMM slot and configuration diagrams

- Population order; start with "A" first, "B" second, "C" third, etc.
- When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F.
- When two processors are installed, install DIMMs in sequential alphabetic order: CPU1-A, CPU2-A,CPU1-B,CPU2-B,CPU1-C, CP2-C

|        | CPU 1  |                  | CPU 2  |                  |        |
|--------|--------|------------------|--------|------------------|--------|
|        | Slot # | population order | Slot # | population order |        |
| Chnl 3 | 1      | C                | 1      | A                | Chnl 1 |
|        | 2      | G                | 2      | E                |        |
|        | CPU 1  |                  | CPU 2  |                  |        |
|        | Slot # | population order | Slot # | population order |        |
| Chnl 4 | 3      | D                | 3      | B                | Chnl 2 |
|        | 4      | H                | 4      | F                |        |
|        | CPU 1  |                  |        |                  |        |

## Memory

|        | Slot # | population order | CPU 2  |                  |        |
|--------|--------|------------------|--------|------------------|--------|
|        |        |                  | Slot # | population order |        |
| Chnl 2 | 5      | F                | 5      | H                | Chnl 4 |
|        | 6      | B                | 6      | D                |        |
|        | CPU 1  |                  | CPU 2  |                  |        |
|        | Slot # | population order | Slot # | population order |        |
| Chnl 1 | 7      | E                | 7      | G                | Chnl 3 |
|        | 8      | A                | 8      | C                |        |

### Memory Speed by Processor Model

| Processor Models                                                  | Supported Memory Speeds |
|-------------------------------------------------------------------|-------------------------|
| E5-2609v3, E5-2603v3                                              | 1600MT/s                |
| E5-2640v3, E5-2630v3, E5-2620v3, E5-2630Lv3                       | 1866MT/s                |
| E5-2650Lv3, E5-2660v3, E5-2650v3                                  | 2133MT/s                |
| E5-2609v4, E5-2603v4                                              | 1866MT/s                |
| E5-2620v4, E5-2630Lv4, E5-2640v4, E5-2630v4                       | 2133MT/s                |
| E5-2650Lv4, E5-2660v4, E5-2650v4, E5-2680v4, E5-2683v4, E5-2695v4 | 2400MT/s                |

### Standard and Maximum Memory Capacity (Pre-configured Models)

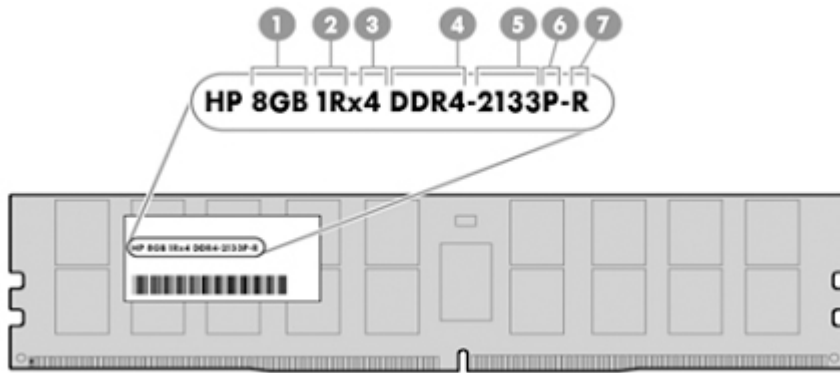
| Pre Configured Models           | Standard Memory | Maximum Memory Plus Optional Memory | Standard Memory Replaced with Optional Memory |
|---------------------------------|-----------------|-------------------------------------|-----------------------------------------------|
| E5-2620v4                       | 16GB (1x16GB)   | 496GB (15x32GB, 1x16GB)             | 512GB (16x32GB)                               |
| E5-2609v4, E5-2609v3, E5-2603v4 | 8GB (1x8GB)     | 488GB (15x32GB, 1x8GB)              | 512GB (16x32GB)                               |
| E5-2603v3                       | 4GB (1x4GB)     | 484GB (15x32GB, 1x4GB)              | 512GB (16x32GB)                               |

### DDR4 memory options part number decoder

**NOTE:** Capacity references are rounded to the common gigabyte (GB) values.

- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB

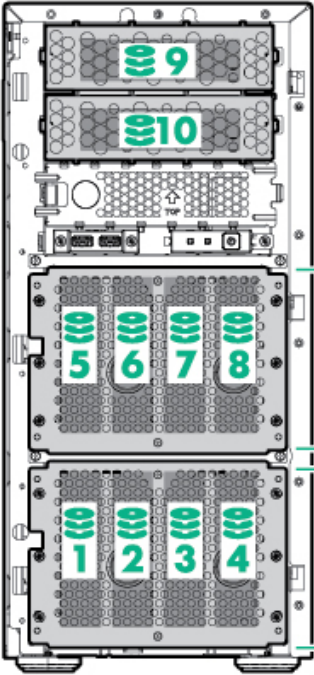
## Memory



1. Capacity: 4GB/8GB/16GB/32GB
2. Rank: 1R = Single-rank; 2R = Dual-rank; 4R = Quad-rank
3. Data width: x4 = 4-bit; x8 = 8-bit
4. Memory generation: DDR4
5. Maximum memory speed: 2133 MT/s
6. CAS latency: P = 15
7. DIMM type: R = RDIMM (registered); L = LRDIMM (load reduced)

Storage

4-bay LFF non-hot-plug drive model

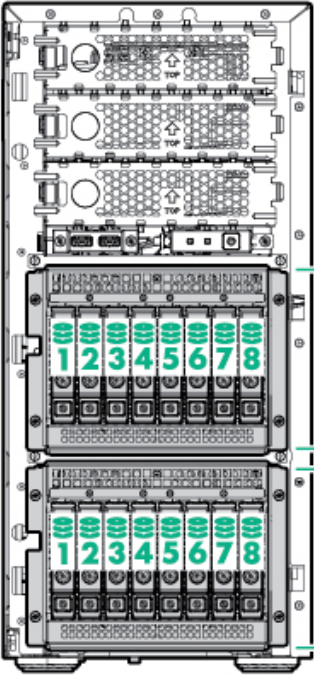


1-8 8 x LFF SATA/SSD Non-hot-plug Hard Drive Bays

9-10 Media Bays

**NOTE:** When populating 10 LFF, not able to install Tape Drive or Optical Drive. Possible Configurations: 1) 8LFF +1 ODD+ 1 Tape Drive (Full/Half), or 2) 9LFF + 1ODD, or 3) 9LFF + 1 Tape Drive (Full/Half).

8-bay SFF hot-plug drive model



1 x 1-8 8 x SFF SAS/SSD Hot Pluggable Hard Drive Bays

2 x 1-8 8 x SFF SAS/SSD Hot Pluggable Hard Drive Bays

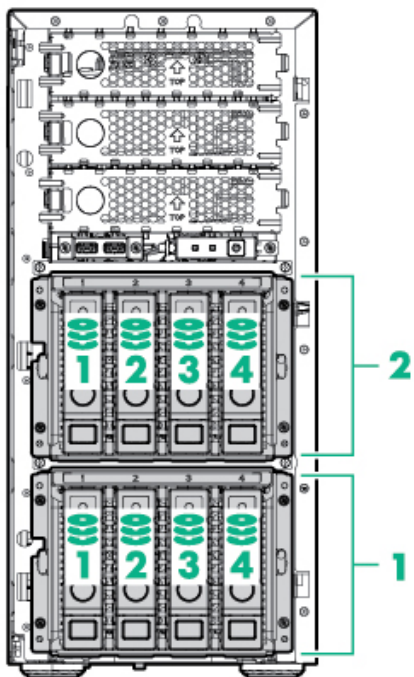
4-bay LFF hot-plug drive model

1 x 1-4 4 x LFF SATA/SSD Hot Pluggable Hard Drive Bays

## Storage

2 x 1-4

4 x LFF SATA/SSD Hot Pluggable Hard Drive Bays



### Maximum Storage Capacity -

Total (10 LFF Drive) 80 TB

Total (16 SFF Drive) 61.44 TB

## Technical Specifications

|                    |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System Unit</b> | <b>Tower Dimensions</b>                                                                                                                 | 17.03(H) x 7.87(W) x 24.41(D) in (43.26 x 20 x 62 cm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                    | <b>Tower Weight</b>                                                                                                                     | Minimum: 32lb (14.51kg)<br>Maximum: 64lb (29.10kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                    | <b>Input Requirements</b><br>(for Standard 460W PSU, see power specifications tables for detail on 460W, 750W and 1200W power supplies) | Range Line Voltage<br>For 550W Power Supply: 6.7 A (at 100 VAC) 3.3 A (at 200 VAC)<br>Rated Input Current<br>Rated Input Frequency<br>Rated Input Power<br>For 550 W Power Supply: < 670 W (at 100 VAC), < 660 W (at 200 VAC),                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                    | <b>BTU Rating</b>                                                                                                                       | Maximum For 550 W Power Supply: 2201 BTU/hr (at 100 VAC), 2153 BTU/hr (at 200 VAC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                    | <b>Power Specifications</b>                                                                                                             | To review typical system power ratings use the Power Advisor which is available via the online tool located at: <a href="http://www.hpe.com/info/hppoweradvisor">http://www.hpe.com/info/hppoweradvisor</a> - Click on the system of interest. Example: ML150 Gen9-Follow the instructions of the next screens.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                    | <b>Power Supply Output</b>                                                                                                              | Rated Steady-State Power For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC)<br>Maximum Peak Power For 550 W Power Supply: 550 W (at 100 VAC), 550 W (at 200 VAC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                    | <b>System Inlet Temperature</b>                                                                                                         | Standard Operating Support 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 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).<br><br>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 175m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3048m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <a href="http://www.hpe.com/servers/ashrae">http://www.hpe.com/servers/ashrae</a><br><br>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 3048 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <a href="http://www.hpe.com/servers/ashrae">http://www.hpe.com/servers/ashrae</a><br><br>System performance may be reduced if operating in the extended ambient operating range or with a fan fault. |

## Technical Specifications

|                                     |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                            |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |                                                                                                                                                                                                                                                                                                                                    | <b>NOTE:</b> Supports A3 extended ambient, A4 extended<br>ambience will be available in early 2015.                                                                                        |
| <b>Relative<br/>Humidity</b>        | Non-operating                                                                                                                                                                                                                                                                                                                      | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).                                                                                                                 |
|                                     | Operating                                                                                                                                                                                                                                                                                                                          | Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity. Maximum to be the lower (less moisture) of 24°C (75.2°F) dew point or 90% relative humidity. |
| <b>Altitude</b>                     | Non-operating                                                                                                                                                                                                                                                                                                                      | 5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.                                                                                           |
|                                     | Operating                                                                                                                                                                                                                                                                                                                          | 3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457m/min (1500 ft/min).                               |
|                                     | Non-operating                                                                                                                                                                                                                                                                                                                      | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457m/min (1500 ft/min).                                                                                                      |
| <b>Acoustic Noise</b>               | 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). |                                                                                                                                                                                            |
|                                     | <b>Idle</b>                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                            |
|                                     | L WAd                                                                                                                                                                                                                                                                                                                              | 3.8 Bels (1P LFF Non Hot-Plug Entry)<br>3.8 Bels (1P LFF Hot-plug Base)<br>4.3 Bels (1P SFF Hot-plug Performance)                                                                          |
|                                     | L pAm                                                                                                                                                                                                                                                                                                                              | 22 dBA (1P LFF Non Hot-Plug Entry)<br>22 dBA (1P LFF Hot-plug Base)<br>25 dBA (1P SFF Hot-plug Performance)                                                                                |
|                                     | <b>Operating</b>                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                            |
|                                     | L WAd                                                                                                                                                                                                                                                                                                                              | 3.8 Bels (1P LFF Non Hot-Plug Entry)<br>3.8 Bels (1P LFF Hot-plug Base)<br>4.1 Bels (1P SFF Hot-plug Performance)                                                                          |
|                                     | L pAm                                                                                                                                                                                                                                                                                                                              | 23 dBA (1P LFF Non Hot-Plug Entry)<br>22 dBA (1P LFF Hot-plug Base)<br>25 dBA (1P SFF Hot-plug Performance)                                                                                |
|                                     | <b>NOTE:</b> Configurations tested for 1P LFF Entry models included two (2) 500GB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.                                                                                                                                                                                         |                                                                                                                                                                                            |
|                                     | <b>NOTE:</b> Configurations tested for 1P and 2P SFF models included two (2) 500GB SFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.                                                                                                                                                                                        |                                                                                                                                                                                            |
|                                     | <b>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.                                                                                                                                                                                           |                                                                                                                                                                                            |
| <b>Emissions<br/>Classification</b> | FCC Rating                                                                                                                                                                                                                                                                                                                         | Class A                                                                                                                                                                                    |
|                                     | Normative Standards                                                                                                                                                                                                                                                                                                                | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1                                                    |
|                                     | <b>NOTE:</b> 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.                                                                                             |                                                                                                                                                                                            |

|                                                 |                            |       |
|-------------------------------------------------|----------------------------|-------|
| <b>HPE Dynamic Smart Array B140i Controller</b> | <b>Number of PCI links</b> | Four  |
|                                                 | <b>PCI link rate</b>       | 4Gb/s |

# Technical Specifications

|                                             |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             |                              | <b>Storage protocol support</b> SATA<br><b>SAS/SATA peak data transfer rate</b> 6Gb/s<br><b>Number of SAS/SATA links</b> 10 links<br><b>SAS/SATA connectivity</b> 2x4 connectors; 2x1 connectors<br><b>Expander support</b> No<br><b>Drives supported (max)</b> Up to 10 Internal Drives<br><b>RAID support</b> 0, 1, 10, 5 SATA<br><b>Software management</b> HPE SSA, SMH, SIM<br><b>Warranty</b> Server warranty<br><b>HPE Secure Encryption license</b> Not Supported<br><b>HPE SmartCache License</b> Not Supported<br><b>HPE Smart Storage Administrator</b> Supported |
| <b>HPE Ethernet 1Gb 4-port 331i Adapter</b> | <b>Network Interface</b>     | 10Base-T/100Base-TX/1000Base-TX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                             | <b>Compatibility</b>         | IEEE 802.3 10Base-T<br>IEEE 802.3ab 1000Base-T<br>IEEE 802.3u 100Base-TX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                             | <b>Data Transfer Method</b>  | PCI Express, two lanes (x2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                             | <b>Controller</b>            | BCM5717                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                             | <b>Network Transfer Rate</b> | 10Base-T (Half-Duplex) 10 Mb/s per port, 40 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             |                              | 10Base-T (Full-Duplex) 20 Mb/s per port, 80 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                             |                              | 100Base-TX (Half-Duplex) 100 Mb/s per port, 400 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                             |                              | 100Base-TX (Full-Duplex) 200 Mb/s per port, 800 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                             |                              | 100Base-TX (Half-Duplex) 1000 Mb/s per port, 4000 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                             |                              | 100Base-TX (Full-Duplex) 2000 Mb/s per port, 8000 Mb/s combined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                             |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                             |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                             | <b>Connector</b>             | RJ-45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                             | <b>Cable Support</b>         | 10 Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)<br>10/100/1000 Base-TX Category 5 or higher UTP; up to 328 ft (100 m)                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Technical Specifications

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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.

<http://www.hpe.com/recycle>

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.

<http://www.hpe.com/recycle>

## Summary of Changes

| Date        | Version History | Action  | Description of Change                                                                                                               |
|-------------|-----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| 2-Apr-2018  | Version 28      | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 4-Dec-2017  | Version 27      | Added   | Added new HPE 12TB SATA 7.2K LFF HDD and HPE RDX 4TB USB 3.0 External/ Internal Disk Backup System.                                 |
| 25-Sep-2017 | Version 26      | Added   | Added new Solid State Drives offering to the HPE Drives section.                                                                    |
|             |                 | Changed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 7-Aug-2017  | Version 25      | Added   | Added new Solid State Drives offering to the HPE Drives section.                                                                    |
| 11-Jul-2017 | Version 24      | Added   | Added support for HPE OneView Standard version 3.1.                                                                                 |
| 5-Jun-2017  | Version 23      | Added   | Added new Solid State Drives offering to the HPE Drives section.                                                                    |
| 8-May-2017  | Version 22      | Added   | Added support for ClearOS.                                                                                                          |
|             |                 | Changed | Operating Systems and Virtualization Software Support for ProLiant Servers and HPE Drives were revised.                             |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 27-Mar-2017 | Version 21      | Added   | Added new Hard Drives.                                                                                                              |
| 13-Feb-2017 | Version 20      | Added   | Added new HDD and SSD offering to the HPE Drives section.                                                                           |
| 28-Nov-2016 | Version 19      | Added   | Added new Hard Drives offering.                                                                                                     |
|             |                 | Changed | Maximum Internal Storage was revised.                                                                                               |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 28-Oct-2016 | Version 18      | Removed | Obsolete Hard Drives were removed from the QuickSpecs.                                                                              |
| 26-Sep-2016 | Version 17      | Added   | Added new SATA LFF hard drives offering.                                                                                            |
|             |                 | Changed | Maximum Internal Storage and Pre-configured Models were revised.                                                                    |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 15-Aug-2016 | Version 16      | Changed | SmartBuy model 860119-S01 was revised.                                                                                              |
| 24-Jun-2016 | Version 15      | Changed | Tower weight under Technical Specifications was revised.                                                                            |
| 6-Jun-2016  | Version 14      | Added   | Added new HPE Drives, and HPE Disk Backup options.                                                                                  |
|             |                 | Changed | Maximum Internal Storage, Upgradeability, HPE Power Supplies, and Storage were revised.                                             |
| 6-May-2016  | Version 13      | Changed | Maximum Internal Storage, Upgradeability, Memory, and HPE Drives were revised.                                                      |
| 8-Apr-2016  | Version 12      | Changed | HPE Processors section was revised.                                                                                                 |
| 31-Mar-2016 | Version 11      | Added   | Added Intel Xeon E5-2600 v4 Processor support, new HPE Gen9 Standard Memory, and new HPE 900W AC 240VDC Redundant Power.            |
|             |                 | Changed | Maximum Internal Storage, Power Supplies, Embedded Management, Service and Support, Pre-configured Models, and Memory were revised. |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 16-Feb-2016 | Version 10      | Added   | New HDD offering was added to HPE Drives.                                                                                           |
|             |                 | Changed | HPE Power Supplies, HPE Disk Backup, and HPE Power Distribution Units (PDUs) were revised.                                          |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 8-Jan-2016  | Version 9       | Added   | New Smart Buy model was added to the NA version only.                                                                               |
| 1-Dec-2015  | Version 8       | Changed | On System Management Chipset, Embedded Management, Server utilities, and HPE Tape Backup were revised.                              |
|             |                 | Removed | Product images were updated.                                                                                                        |
| 28-Sep-2015 | Version 7       | Added   | Added new 6Gb SATA Solid State Drives.                                                                                              |
|             |                 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                     |
| 17-Aug-2015 | Version 6       | Added   | New Solid State Drives offering.                                                                                                    |

## Summary of Changes

|             |           |         |                                                                                                                                                                                                                   |
|-------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |           |         | Added new graphic options.                                                                                                                                                                                        |
|             |           | Changed | Service and Support was updated.                                                                                                                                                                                  |
|             |           |         | Maximum Storage was revised.                                                                                                                                                                                      |
| 1-Jun-2015  | Version 5 | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                                                                                                   |
|             |           | Added   | New Hard Drives were added to Core Options.                                                                                                                                                                       |
|             |           |         | New RDX+ external backup options were added.                                                                                                                                                                      |
|             |           | Changed | Standard Features and HPE Power Supplies were revised.                                                                                                                                                            |
|             |           | Removed | Obsolete SKUs were removed from the QuickSpecs.                                                                                                                                                                   |
| 24-Apr-2015 | Version 4 | Added   | Added 813534-B21 and 813535-B21 to HPE Power Supplies.                                                                                                                                                            |
| 30-Mar-2015 | Version 3 | Added   | New Hard Drives offering.                                                                                                                                                                                         |
|             |           |         | Optional Software added to HPE Storage Controllers.                                                                                                                                                               |
|             |           |         | Added HPE Smart Array P841/4GB FBWC 12Gb 4-ports Ext SAS Controller.                                                                                                                                              |
|             |           | Changed | HPE Memory and HPE Disk Storage Systems were updated.                                                                                                                                                             |
| 2-Sep-2014  | Version 2 | Added   | Added HPE Insight Software section and Network controller sections.                                                                                                                                               |
|             |           |         | Added new HPE Drives and new G4 UPS models.                                                                                                                                                                       |
|             |           | Changed | HPE Processors, HPE Memory, HPE Drives, HPE Tape Backup, HPE Disk Backup, HPE Rack Mount Consoles, KVM Switches, and Keyboards, HPE Uninterruptible Power Systems (UPS), and HPE USB and SD Options were updated. |
| 1-Dec-2014  | Version 1 | New     | New QuickSpecs.                                                                                                                                                                                                   |



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

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