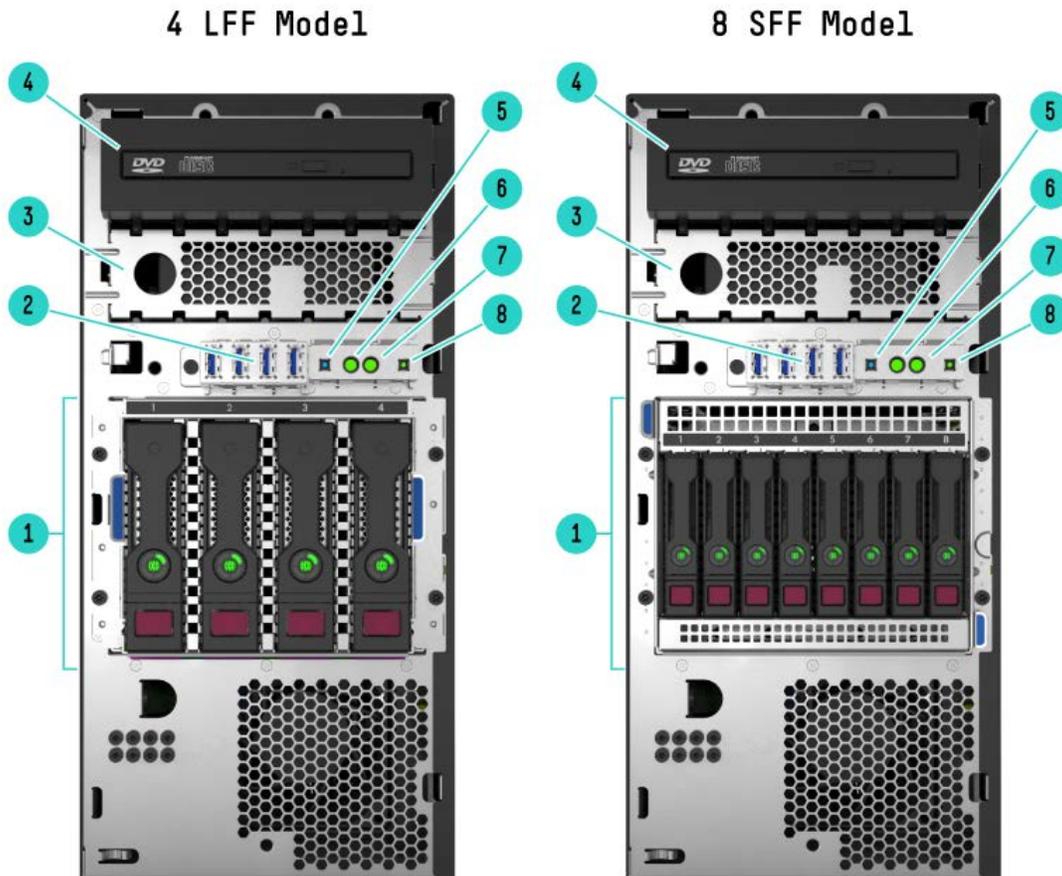


### Overview

#### HPE ProLiant ML30 Generation 9 (Gen9)

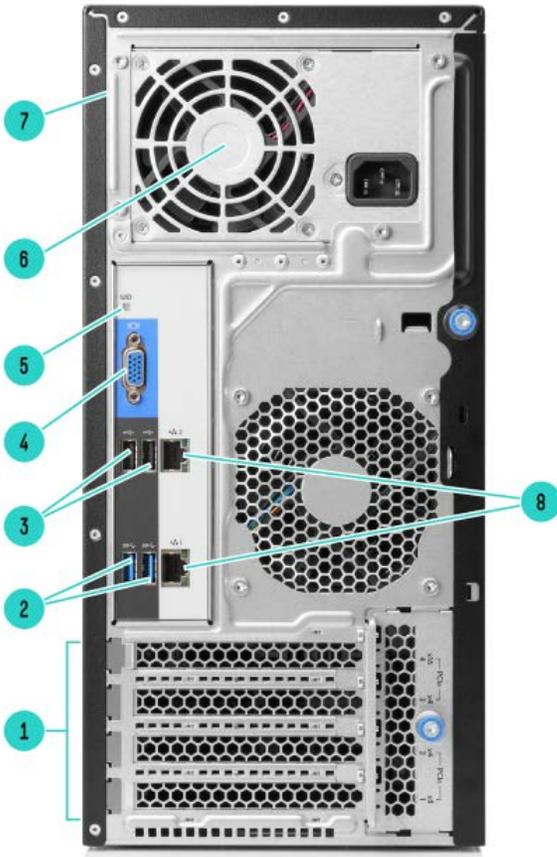
HPE ProLiant ML30 Gen9, delivers a full featured single-socket tower server with the right features at a competitive price, easy to use and maintain for growing small businesses and remote branch offices.



#### Front View (details for 4LFF and 8SFF)

1. Four (4) LFF or Eight (8) SAS/SATA HDD cage
2. Four (4) USB 3.0 connectors
3. Media Drive Blank
4. 9.5mm Slim SATA DVD-ROM or DVD RW Optical Drive
5. Power On/Standby button and system power LED button
6. NIC status LED
7. Health LED
8. UID (unit identification) button/LED

## Overview



### Rear View

1. PCI Slots (Slots 1-4)
2. USB 3.0 (2)
3. USB 2.0 (2)
4. Video Connector
5. UID LED
6. Power Supply Power Fan
7. HPE 350W Power Supply
8. Network RJ-45 Ports (2)

## Overview



### Internal View

1. One (1) processor and heatsink
2. System Fan
3. Power Supply
4. Four (4) DDR4 DIMM slots
5. System Fans: System fan and Front PCI fan (optional)
6. Two (2) Internal USB 2.0 connectors (USB Type A, Tape Drive Header)
7. Gen9 Smart Storage Battery Holder Kit
8. MicroSD slot
9. Four (4) PCIe expansion slots

## Standard Features

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

Intel® Xeon® processor E3-1200v5 quad core processor family is designed to deliver the best combination of performance, built-in capabilities, and cost-effectiveness. The product also supports Intel® Pentium® and Intel® Core-i3 dual core processors. Choose one of the following processors based on the model:

Processor	Model	CPU frequency	Cores	L3 Cache	Power	DDR4 Hz
One of the following depending on model	G4400	3.3GHz	2	3MB	54W	2133
	G4500	3.5GHz	2	3MB	51W	2133
	i3-6100	3.7GHz	2	3MB	51W	2133
	i3-6300	3.8GHz	2	4MB	51W	2133
	E3-1220v5	3.0GHz	4	8MB	80W	2133
	E3-1230v5	3.4GHz	4	8MB	80W	2133
	E3-1240v5	3.5 GHz	4	8MB	80W	2133
	E3-1270v5	3.6GHz	4	8MB	80W	2133
	E3-1240Lv5	2.1GHz	4	8MB	25W	2133

### Cache Memory

One of the following depending on model

8MB (1x8MB) Level 3 cache

**NOTE:** For Quad-core Intel Xeon processors.

3MB (1 x 3MB) Level 3 Cache

**NOTE:** For Dual-core Intel Pentium® Core™ i3 processors.

### Chipset

Intel® C236 Chipset

**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 2.3) 4GB NAND

**NOTE:** For more information, visit: <http://www.hp.com/go/ilo>.

### Memory

Type:

DDR4 Unbuffered (UDIMM)

DIMM Slots Available 4 4 DIMMs (2 Channels/ 2 DIMMs per channel)

Maximum Capacity 64GB (4 x 16GB UDIMM @2133MHz)  
(UDIMM)

**NOTE:** HPE memory from previous generation servers are not fully compatible with the HPE ProLiant ML30 Gen9 Servers. For information regarding HPE Qualified Server Memory visit: <http://www.hp.com/products/memory>.

### Memory Protection

ECC

## Standard Features

<b>Network Controller</b>	HPE Ethernet 1Gb 2-port NC332i Adapter
	<b>Model Adapter</b>

### Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
4	PCIe 3.0	x16	x16		Full length/full height	
3	PCIe 3.0	x1	x4		Full length/full height	
2	PCIe 3.0	x1	x4		Full length/full height	
1	PCIe 3.0	x4	x8		Half Length/Full Height	

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

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Device Number	Form Factor	Notes
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<b>Storage Controller</b>	Base Models	HPE Dynamic Smart Array B140i Controller
One of the following depending on model	<b>NOTE: B140i can't mix with any standup internal controller.</b>	
	Performance Models	HPE Dynamic Smart Array B140i Controller
	<b>NOTE: B140i can't mix with any standup internal controller.</b>	

<b>Internal Storage Devices</b>	Optical Drives	Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive
One of the following depending on model	Hard Drives	None ship standard
	Hard Drive Bays	4 LFF drive bays (non-hot-plug and hot-plug) 8 SFF hot-plug drive bays
		<b>NOTE: HPE ProLiant ML30 Series servers offer both SFF and LFF models.</b> <b>NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HPE SFF HDD Blank Kit or P/N 666986-B21: HPE LFF HDD Blank Kit.</b>

Maximum Internal Storage	CAPACITY	CONFIGURATION
Hot Plug LFF SAS	32TB	4 x 8TB
Hot Plug SFF SAS	16TB	8x 2TB
Hot Plug LFF SATA	32TB	4 x 8TB
Hot Plug SFF SATA	16TB	8 x 2TB
Non-Hot Plug LFF SATA	16TB	4 x 4TB
Hot Plug SFF SATA SSD	960GB	8 x 120GB

## Standard Features

Hot Plug LFF SATA SSD

480GB

4 x 120GB

### Power Supply

HPE 350W ATX-Gen9 Power Supply FIO Kit

One of the following HPE 460W Redundant Power Supply depending on model

HPE Entry-Level Power Supplies provide lower-cost options for customers trying to balance their need for enterprise class efficiency and reliability while maintaining lowest possible hardware costs. All Entry-Level power supply options have been designed specifically for HPE ProLiant Gen9 Essential Series servers.

The HPE 350W FIO Power Supply is the standard, non-redundant AC power supply option for most HPE ProLiant Gen9 Essential servers. It features Bronze-level (85%) certified power efficiency with a set of features optimized for the Gen9 Essential-series rack and tower servers.

The HPE 460W (Redundant) AC Power Supply can be configured with redundancy enablement kit to support power redundancy in ProLiant ML30 Servers, 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 center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. If a different power cord is required, please check the ProLiant Power Cables web page.

To review the power requirements for your selected system, please use the HPE Power Advisor Tool located at <http://www.hp.com/go/hppoweradvisor>.

Power Specification and Technical Content for supported power supplies can be found at: <http://www8.hp.com/h20195/v2/GetHTML.aspx?docname=c04111541>

### Required Cabling Server Power Cords

The ProLiant ML30 server is a tower server that ships standard with a 6' NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional power cords, they can check the power cord matrix for the appropriate SKU.

### System Fans

One of the following depending on model

1P model system fan

#### Non-redundant

One (1) Non-redundant system fan

#### Redundant

1P model PCIe fan

#### Non-redundant

One (1) Non-redundant PCIe fan

#### Redundant

### Interfaces

Video

1 (rear)

Network RJ-45 (Ethernet)

2 (1 shared for HPE Integrated Lights-Out)

Micro SD Slot

1 (internal)

**NOTE: 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

6 (4 front, 2 rear)

USB 2.0

4 (2 rear, 1 internal standard USB, 1 internal USB header)

## Standard Features

<b>Operating Systems and Virtualization Software Support for ProLiant Servers</b>	<p><b><u>Microsoft Windows Server</u></b></p> <p><b><u>Red Hat Enterprise Linux (RHEL)</u></b></p> <p><b><u>SUSE Linux Enterprise Server (SLES)</u></b></p> <p><b><u>VMware</u></b></p> <p><b>NOTE:</b> For more information on HPE's 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: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a> and our driver download page.</p>
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<b>Upgradeability</b>	<p>Upgradeable to 4 cores</p> <p><b>NOTE: Total 2 or 4 cores.</b></p> <p>Up to 4 DIMM slots available for higher memory capacity</p> <p>Up to 8 SFF Hard Drive Bays; or 4 LFF Hard Drive Bays</p> <p>All PCIe3.0 I/O slots for additional communications and storage expansion</p> <p>Redundant Power Supply</p> <p>Optical Drive Bay</p> <p><b>NOTE: Up to 2.</b></p>
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<b>Industry Standard Compliance</b>	<p>ACPI 2.0b Compliant</p> <p>PCIe 3.0 Compliant</p> <p>PXE Support</p> <p>WOL Support</p> <p>Microsoft® Logo certifications</p> <p>USB 2.0 /3.0 Support</p>
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<b>Graphics</b>	<p>Integrated Matrox G200 video standard</p> <ul style="list-style-type: none"> <li>• 1280 x 1024 (32 bpp)</li> <li>• 1920 x 1200 (16 bpp)</li> </ul> <p>HPE iLO 4 On System Management Memory</p> <ul style="list-style-type: none"> <li>• 16 MB Flash</li> <li>• 256 MB DDR 3 with ECC (112 MB after ECC and video)</li> </ul>
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<b>HPE Server UEFI/Legacy ROM</b>	<b>HPE Server UEFI /Legacy ROM</b>
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Unified Extensible Firmware Interface (UEFI) is an industry standard that provides better manageability and more secured configuration 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.hp.com/go/proliantuefi/docs>**

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

## Standard Features

- Embedded UEFI Shell
- Mass Configuration Deployment Tool using HPE RESTful API.
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM

For more information please visit <http://www.hp.com/go/proliant/uefi>.

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

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

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<b>Form Factor</b>	Micro ATX Tower (4U) chassis with feet/bezel:
One of the following depending on model	14.5" (36.82cm) Height x 6.89" (17.5cm) Width x 18.71" (47.52cm) Length
	8 SFF Drive Bay Cage: 4.6" (11.74cm) Height x 5.74" (14.57cm) Width x 4.79" (12.15cm) Length
	4 LFF Drive Bay Cage: 4.6" (11.72cm) Height x 5.74" (14.57cm) Width x 6.90" (17.54cm) Length

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<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. Learn more at <a href="http://www.hp.com/go/ilo">http://www.hp.com/go/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.hp.com/go/ProLiant/uefi">http://www.hp.com/go/ProLiant/uefi</a> .
	<b>RESTful API</b>	A single programmatic web interface that allows you to manage and monitor your HPE ProLiant server using basic HTTP operations (GET, PUT, POST, DELETE and PATCH). RESTful API for iLO 4 conforms to the Redfish 1.0 DMTF standard (iLO firmware version v2.30 or higher required for Redfish conformance). Learn more at <a href="http://www.hp.com/go/restfulapi">http://www.hp.com/go/restfulapi</a> .
	<b>Intelligent Provisioning</b>	Provision servers by discovering and deploying 1 to few servers with Intelligent Provisioning. Learn more at <a href="http://www.hp.com/go/intelligentprovisioning">http://www.hp.com/go/intelligentprovisioning</a> .
	<b>Embedded Remote Support</b>	Hewlett Packard Enterprise's embedded remote support, when used with Insight Online direct connect or Hewlett Packard Enterprise 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.hp.com/go/insightonline/info">http://www.hp.com/go/insightonline/info</a> .

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<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). Learn more at <a href="http://www.hp.com/go/smartupdate">http://www.hp.com/go/smartupdate</a> .
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## Standard Features

<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 SUM to provide quick and seamless firmware updates. Learn more at <a href="http://www.hp.com/go/sim">http://www.hp.com/go/sim</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 for Windows and Linux or Scripting Tools for Windows PowerShell. Learn more at <a href="http://www.hp.com/go/ProLiantSTK">http://www.hp.com/go/ProLiantSTK</a> or <a href="http://www.hp.com/go/powershell">http://www.hp.com/go/powershell</a> .
<b>RESTful Interface Tool</b>	Scripting tool to provision servers using iLO 4 RESTful API to discover and deploy servers at scale. Learn more at <a href="http://www.hp.com/go/resttool">http://www.hp.com/go/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.hp.com/go/ilo/mobileapp">http://www.hp.com/go/ilo/mobileapp</a> .
<b>HPE Insight Online</b>	HPE Insight Online, available at no additional cost as part of your Hewlett Packard Enterprise warranty, Care Pack 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.hp.com/go/insightonline/info">http://www.hp.com/go/insightonline/info</a> .

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### Security

Power-on password  
 Setup password  
 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 Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Care Pack 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 HPE replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.**

## 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.hp.com/go/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. 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.hp.com/go/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.hp.com/go/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.hp.com/go/insightcontrol>.

### 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 HPE 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, HPE data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**  
HPE's 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)**  
HPE's 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 HPE 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

## Optional Features

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. More information, instructional videos, and free console management software are available at <http://www.hp.com/go/vsa1TB>.

**NOTE:** For more information about Storage Software including QuickSpecs, please see: <http://www.hp.com/go/storage/software>.

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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 HPE's Customer Business Center or an Authorized Partner for assistance. <https://h22174.www2.hp.com/SimplifiedConfig/Index>.

## Service and Support

### Service and Support HPE Technology Services for Industry Standard Servers

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. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

### Protect your business beyond warranty with HPE Care Pack Services

HPE Care Pack Services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.

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#### Optimized Care **Supports maintaining servers at optimum performance availability**

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

HPE Proactive Care helps prevent problems and stabilize IT by utilizing secure, real-time, predictive analytics and proactive consultations when your products are connected to Hewlett Packard. This Care Pack Service combines three years' proactive reporting and advice with our 24x7 coverage and enhanced escalation management, four hour hardware response time and two hour call back for software questions on leading industry standard software running on your HPE ProLiant server. <http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

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#### Standard Care Package **Supports maintaining high level of server availability**

##### **Foundation Care 24x7, three-year Care Pack Service**

HPE Foundation Care 24x7 connects you to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues. Hardware onsite response within four hours if needed; collaborative software included in this Care Pack service provides troubleshooting assistance on industry leading software running on your HPE server. Simplify your support experience and make Hewlett Packard Enterprise your first call for hardware or software questions.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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#### Related Services **HPE ProLiant Server Hardware Installation**

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

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf>

##### **Factory Express for Servers and storage**

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

##### **Data Privacy Services**

Protect your data through better media management. HPE Data privacy services help manage and protect sensitive data to reduce the risk of unauthorized access to private information and help meet compliance requirements. Our retention services allow you to keep drives and other devices upon failure, our removal services provide convenient data sanitization and our recovery services allow you to safely

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## Service and Support

retire IT assets and capture any remaining value from the hardware. <http://www.hp.com/services/dataprivacy>

Additional HPE Care Pack services can be found at: <http://www.hp.com/go/cpc>

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### **Connect your devices to HPE**

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77% reduction in down time, near 100% 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.

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**HPE Support Center** 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.hp.com/go/hpsc>

HPE's 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 Care Pack or Hewlett Packard Enterprise contractual support agreement.

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

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

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

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

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### **For more information**

To learn more on HPE ProLiant servers, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner or visit: <http://www.hp.com/services/proliant>

## 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.

**NOTE:** All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HPE SFF Hard Drive Blank Kit or P/N 666986-B21: HPE LFF Hard Drive Blank Kit.

**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 [ProLiant Power Cables](#) web page.

	Base Models	Performance Models
<b>[SKU Number]</b>	824379-B21	830893-B21
<b>Model Name</b>	HPE ProLiant ML30 Gen9 E3-1220v5 1P 4GB-U B140i 4LFF SATA 350W PS Base Server	HPE ProLiant ML30 Gen9 E3-1240v5 1P 8GB-U B140i 4LFF SATA 460W RPS Perf Server
<b>Processor</b>	Intel® Xeon® E3-1220v5	Intel® Xeon® E3-1240v5
<b>Number of Processors</b>	One	
<b>Memory</b>	4GB (1x4GB UDIMMs, 2133 MHz)	8GB (1x8GB UDIMMs, 2133 MHz)
<b>Network Controller</b>	Broadcom 5720 Dual-port 1GbE	
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i	
<b>Hard Drive</b>	None ship standard; includes 2 LFF hard drive blanks	
<b>Internal Storage</b>	4 LFF HDD Bays (Hot Plug)	
<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)	
<b>Optical Drive</b>	None	
<b>PCI-Express Slots</b>	4 PCIe 3.0 slots	
<b>Power Supply</b>	(1) 350W ATX Power Supply	(1) 460W Redundant Power Supply
<b>Fans</b>	1 non hot plug, non-redundant	
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional)	
<b>Form Factor</b>	Tower (4U)	
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.	

## Smart Buy Models

	Smart Buy Models
<b>[SKU Number]</b>	831065-S01
<b>Model Name</b>	HPE ProLiant ML30 Gen9 E3-1230v5 4G US Svr/S-Buy
<b>Processor</b>	Intel® Xeon® E3-1230v5
<b>Number of Processors</b>	One
<b>Memory</b>	4GB (1x4GB UDIMMs, 2133 MHz)
<b>Network Controller</b>	Broadcom 5720 Dual-port 1GbE
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i
<b>Hard Drive</b>	None
<b>Internal Storage</b>	4 LFF HDD Bays (Hot Plug)
<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)
<b>Optical Drive</b>	9.5mm SATA JB DVD-RW
<b>PCI-Express Slots</b>	4 PCIe 3.0 slots
<b>Power Supply</b>	(1) 350W ATX Power Supply
<b>Fans</b>	1 non hot plug, non-redundant
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional)
<b>Keyboard/Mouse</b>	USB RoHS US Keyboard and USB RoHS Opt Mouse included
<b>Form Factor</b>	Tower (4U)
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

## 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 a Hewlett Packard Enterprise 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)

<b>[CTO Server]</b>	HPE ProLiant ML30 Gen9 Non-hot Plug 4LFF Configure-to-order Server	HPE ProLiant ML30 Gen9 Hot Plug 4LFF Configure-to-order Server	HPE ProLiant ML30 Gen9 Hot Plug 8SFF Configure-to-order Server
<b>SKU Number</b>	823401-B21	823402-B21	823403-B21
<b>Processor</b>	1		
<b>DIMM Slots</b>	4 DIMM slots for UDIMM DDR4 Memory		
<b>Storage Controller</b>	HPE Dynamic Smart Array B140i		
<b>PCIe</b>	4 PCIe 3.0 slots		
<b>Drive Cage</b>	4LFF Non-Hot Plug	4LFF Hot Plug	8SFF Hot Plug
<b>Network Controller</b>	Broadcom 5720 Dual-port 1GbE		
<b>Fans</b>	1 non-hot plug, non-redundant		
<b>Management</b>	iLO Management (standard), Intelligent Provisioning (standard), iLO Essentials (optional)		
<b>USB</b>	4 front, 4 rear, 2 internal		

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

#### HPE Processors

#### Entry Processors

HPE ML30 Gen9 Intel® Pentium® G4400 (3.3GHz/2-core/3MB/54W) FIO Processor Kit	820295-L21
HPE ML30 Gen9 Intel® Pentium® G4500 (3.5GHz/2-core/3MB/51W) FIO Processor Kit	823389-L21
HPE ML30 Gen9 Intel® Core™ i3-6300 (3.8GHz/2-core/4MB/51W) FIO Processor Kit	823379-L21
HPE ML30 Gen9 Intel® Core™ i3-6100 (3.7GHz/2-core/3MB/51W) FIO Processor Kit	837095-L21

#### Base Processors

HPE ML30 Gen9 Intel® Xeon® E3-1220v5 (3.0GHz/4-core/8MB/80W) FIO Processor Kit	820293-L21
HPE ML30 Gen9 Intel® Xeon® E3-1230v5 (3.4GHz/4-core/8MB/80W) FIO Processor Kit	823371-L21

#### Performance Processors

HPE ML30 Gen9 Intel® Xeon® E3-1240Lv5 (2.1GHz/4-core/8MB/25W) FIO Processor Kit	820299-L21
HPE ML30 Gen9 Intel® Xeon® E3-1240v5 (3.5GHz/4-core/8MB/80W) FIO Processor Kit	823373-L21

## Configuration Information - Factory Integrated Models

HPE ML30 Gen9 Intel® Xeon® E3-1270v5 (3.6GHz/4-core/8MB/80W) FIO Processor Kit 823375-L21

**NOTE:** DDR4 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

**NOTE:** For the Intel® C236 Chipset E3-1200 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 1200x v#, 1 is the number of CPU, 2 is socket type/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) is the version number

### HPE Memory

**NOTE:** Select one or more memory below

**NOTE:** HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server.

**NOTE:** HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.

**NOTE:** With one processor installed, four DIMMs slots are available.

**NOTE:** For more information on ProLiant Energy Efficient features, see: <http://www.hp.com/go/proliant-energy-efficient>.

**NOTE:** Depending on the memory configuration and processor model, the memory speed would run at 2133MHz. Please see Memory Population Table or the Online Memory Configuration tool at: <http://www.hp.com/go/ddr4config>

#### Unbuffered DIMMs (UDIMMs)

HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805667-B21

HPE 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805669-B21

HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 805671-B21

HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit 819880-B21

### HPE Power Supplies

**NOTE:** 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.hp.com/go/hppoweradvisor>.

**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

#### HPE Entry-Level Power Supplies

HPE 460W CS Gold Ht Plg Power Supply Kit 503296-B21

**NOTE:** Must select 4U RPS Enablement Kit (P/N: 822607-B21).

**Customer can select:** 460W Hot Plug Power Supply x1 + 4U RPS Enablement Kit x1 or

**Customer can select:** 460W Hot Plug Power Supply x2 + 4U RPS Enablement Kit x1

HPE ML30 Gen9 350W E-Star 2.0 FIO Power Supply Kit 822384-B21

HPE ML30 Gen9 4U Redundant FIO Power Supply Enablement Kit 822607-B21

## Configuration Information - Factory Integrated Models

### Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

<b>HPE Optical Drives</b>	HPE ML30 Gen9 Slim Optical Disk Drive FIO Enablement Kit	820288-B21
<b>HPE Cooling Options</b>	HPE ML30 Gen9 Front PCI FIO Redundant Fan Kit	820290-B21
	<b>NOTE: Required for any PCI-E card.</b>	
<b>HPE Insight Software</b>	<b>HPE Insight Control</b>	
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
	HPE Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE
<b>BIOS Mode</b>	HP Legacy FIO Mode Setting	758959-B22
	<b>NOTE: The Legacy Mode Setting and HP Dual 8GB microSD EM USB Kit (741279-B21) CANNOT be selected together.</b>	
<b>Controller State</b>	HP Mfg FIO Enable HBA Mode Setting	792962-B21
	<b>NOTE: If H240 is the primary controller with this option, then RAID is not allowed</b>	
	HP AHCI-Enable FIO Setting	801845-B21
	<b>NOTE: If B140i is the primary controller with this option, then RAID is not allowed</b>	

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

## 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 a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

<b>HPE Unique Options</b>	HPE ML30 Gen9 Front PCI FIO Redundant Fan Kit	820290-B21
	<b>NOTE: Required for any PCI-E card.</b>	
	HPE ML30 Gen9 4 Large Form Factor Hot Plug Hard Drive Cage Kit	822608-B21
	HPE ML30 Gen9 8 Small Form Factor Hot Plug Hard Drive Cage Kit	822756-B21

<b>HPE Memory</b>	<b>Unbuffered DIMMs (UDIMMs)</b>	
	HPE 4GB (1x4GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805667-B21
	HPE 8GB (1x8GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805669-B21
	HPE 16GB (1x16GB) Dual Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	805671-B21
	HPE 8GB (1x8GB) Single Rank x8 DDR4-2133 CAS-15-15-15 Unbuffered Standard Memory Kit	819880-B21

<b>HPE Optical Drives</b>	HPE 9.5mm SATA DVD-ROM JackBlack Gen9 Optical Drive	726536-B21
	HPE 9.5mm SATA DVD-RW JackBlack G9 Optical Drive	726537-B21

**HPE Drives** **NOTE:** 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.  
**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

### SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HPE 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HPE 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HPE 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21

## Core Options

HPE 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HPE 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HPE 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HPE 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
<b>NOTE: User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section.</b>	
<b>If B140i is the primary controller, user can only select SATA drives.</b>	
<b>SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives</b>	
HPE 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HPE 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
HPE 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21
HPE 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
<b>NOTE: User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section.</b>	
<b>If B140i is the primary controller, user can only select SATA drives.</b>	
<b>SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives</b>	
HPE 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
HPE 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21
HPE 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21
HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
<b>NOTE: User may select any combination of SAS or SATA Hard Drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section.</b>	
<b>If B140i is the primary controller, user can only select SATA drives.</b>	
<b>SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives</b>	
HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21

## Core Options

HPE 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21

**NOTE: User may select any combination of SAS or SATA Hard Drives.**

**SAS drives require the selection of a SAS controller. See card lists in Controllers section.**

**If B140i is the primary controller, user can only select SATA drives.**

### SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HPE 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HPE 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
HPE 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765453-B21
HPE 2TB 6G SATA 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765455-B21

**NOTE: User may select any combination of SAS or SATA Hard Drives.**

**SAS drives require the selection of a SAS controller. See card lists in Controllers section.**

**If B140i is the primary controller, user can only select SATA drives.**

### SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HPE 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HPE 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HPE 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HPE 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HPE 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
HPE 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21
HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793667-B21
HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793683-B21
HPE 8TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793695-B21

**NOTE: User may select any combination of SAS or SATA Hard Drives.**

**If B140i is the primary controller, user can only select SATA drives. SAS drives require the selection of a SAS controller. See card lists in Controllers section.**

### 6G SATA Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives

HPE 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21
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## Core Options

### 6G SATA Hot Plug SFF Value Endurance (2.5-inch) Enterprise Value M1 Solid State Drives

HPE 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty M1 Solid State Drive 764923-B21

### 6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives

HPE 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive 691852-B21

### 6G SATA Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives

HPE 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive 718171-B21

### Hard Drive Kits

HPE Large Form Factor Hard Drive Blank Kit 666986-B21

HPE Small Form Factor Hard Drive Blank Kit 666987-B21

HP ML10v2 Drive Enablement Kit 812248-B21

**NOTE: Compatible with all chassis and supports NHP LFF Hard Disk. If ATX PSU is installed, system support up to 2x. If RPS is installed, system support up to 1x.**

## HPE Networking

### 1 Gigabit Ethernet adapters

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

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

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

### 10 Gigabit Ethernet adapters

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

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

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

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

**NOTE: Max=1 if selected with another x8 device.**

## HPE Power Supplies

### HPE Entry-Level Power Supplies

HPE ML30 Gen9 350W E-star 1.0 FIO Power Supply Kit 820303-B21

HPE ML30 Gen9 350W E-star 2.0 FIO Power Supply Kit 822384-B21

**NOTE: Max=1.**

HPE 460W CS Gold Ht Plg Power Supply Kit 503296-B21

**NOTE: Must select 4U RPS Enablement Kit.**

Customer can select:460W Hot Plug Power Supply x1 + 4U RPS Enablement Kit x1

460W Hot Plug Power Supply x2 + 4U RPS Enablement Kit x1

Max=2

## HPE Computation and Graphics Accelerators

HPE NVIDIA Quadro K2200 Graphics Accelerator

J0G89A

**NOTE: An x16 device cannot be selected together with GPU.**

## 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 a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

<b>HPE Insight Software</b>	<b>HPE Insight Control</b>	
	HPE Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28ABE
	HPE Insight Control Server Provisioning Media Kit	BD883A
	HPE Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HPE Insight Management Media Kit	C6N31A

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

**NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HPE Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HPE Insight Control Media Kit can be ordered separately, or can be downloaded at: <http://www.hp.com/go/insightupdates>.

**NOTE:** For additional license options please see the QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/12631\\_na/12631\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html).

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<b>Embedded Management</b>	<b>HPE iLO Advanced</b>	
	HPE iLO Advanced including 3yr 24x7 Technical Support and Updates E-LTU	E6U64ABE
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HPE iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HPE iLO Advanced Flexible Qty License with 3yr 24x7 Tech Support and Updates	BD506A
	HPE iLO Advanced Tracking License with 3yr 24x7 Tech Support and Updates	BD507A
	HPE iLO Advanced including 1yr 24x7 Technical Support and Updates E-LTU	E6U59ABE

### HPE iLO Essentials

	HPE Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License	BD774A
	HPE Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License	BD775A
	HPE Integrated Lights-Out Essentials including 3yr 24x7 Technical Support and Updates E-LTU	E6U61ABE
	HPE Integrated Lights-Out Essentials including 1yr 24x7 Technical Support and Updates E-LTU	E6U62ABE

**NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at:

[http://h18004.www1.hp.com/products/quickspecs/14276\\_na/14276\\_na.html](http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html).

**NOTE:** For more information, visit: <http://www.hp.com/go/ilo>.

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<b>HPE Storage Controllers</b>	<b>SAS Controllers</b>	
	HPE Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller	820834-B21

## Additional Options

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices

Must select P440/P840 Cable Kit x1

Max=1

Must select Megacell battery x1 + battery holder kit x1 if no other P-series controllers are selected.

HPE Smart Array P440/4GB FBWC 12Gb 1-port Int SAS Controller 726821-B21

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices Must select P440/P840 Cable Kit x1

Must select Megacell battery x1 + battery holder kit x1 if no other P-series controllers are selected.

Max=1

HPE Smart Array P441/4GB FBWC 12Gb 2-ports Ext SAS Controller 726825-B21

**NOTE:** Must select Megacell battery x1 + battery holder kit x1 if no other P-series controllers are selected.

Max=1

HPE ML110 Gen9 Mini SAS P440/P840 Cable Kit 789651-B21

**NOTE:** 1pcs required per P440/4G or P440/2G controller.

### SAS Controller Options

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

**NOTE:** Max=1.

### HPE Smart Host Bus Adapters

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

**NOTE:** Device Count - This controller can support up to 8 internal SAS/SATA devices

1pc required per H240 controller for HPE 4LFF CTO Server

2pcs required per H240 controller for 8SFF CTO Server

Max=1

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

**NOTE:** Max=1.

HPE ML110 Gen9 Mini SAS H240 Cable Kit 789648-B21

**NOTE:** 1pc required per H240 controller for HPE 4LFF CTO Server

2pcs required per H240 controller for 8SFF CTO Server

### Battery Holder

HPE ML150 Gen9 Smart Storage Battery Holder Kit 786710-B21

**NOTE:** Max=1.

**HPE Tape Backup** **NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: <http://www.hp.com/go/tape>. For hardware and software compatibility of HPE tape backup products see: <http://www.hp.com/storage/SPOCK> and <http://www.hp.com/go/ebs>.

**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-6 Ultrium 6650 SAS External Tape Drive EH964A

## Additional Options

HPE StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
HPE Mini SAS High Density to 4-lane Mini SAS External Fanout 2 Meter Cable	K2R09A
HPE Mini SAS High Density to 4-lane Mini SAS External Fanout 4 Meter Cable	K2R10A
HPE StoreEver LTO-7 Ultrium 15000 External Tape Drive	BB874A

### HPE Disk Storage Systems

<b>Disk Enclosures</b>		
HPE D6000 Dual I/O Module Disk Enclosure		QQ695A
<b>NOTE: See the D6000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at:</b>		
<b><a href="http://h18000.www1.hp.com/products/quickspecs/14419_na/14419_na.html">http://h18000.www1.hp.com/products/quickspecs/14419_na/14419_na.html</a></b>		
HPE D6000 w/35 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 140TB Bundle		E7W30A
HPE D6000 w/70 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 280TB Bundle		E7W31A
HPE D6000 w/35 2TB 6G SAS 7.2K LFF Dual port MDL HDD 70TB Bundle		QQ697A
HPE D6000 w/70 2TB 6G SAS 7.2K LFF Dual port MDL HDD 140TB Bundle		QQ698A
HPE D6000 w/35 3TB 6G SAS 7.2K LFF Dual port MDL HDD 105TB Bundle		QQ699A
HPE D6000 w/70 3TB 6G SAS 7.2K LFF Dual port MDL HDD 210TB Bundle		QQ700A
HPE D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle		E7W32A
HPE D6000 w/70 6TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 420TB Bundle		M0T57A
HPE D6000 w/35 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 280TB Bundle		M0T58A
HPE D6000 w/70 8TB 12G SAS 7.2K LFF (3.5in) Dual Port MDL HDD 560TB Bundle		M0T59A

### HPE USB and SD Options

<b>HPE Enterprise Mainstream Flash Media Kits for Memory Cards</b>		
HPE 8GB microSD Enterprise Mainstream Flash Media Kit		726116-B21
HPE 32GB microSD Enterprise Mainstream Flash Media Kit		700139-B21
HPE 8GB USB Enterprise Mainstream Flash Media Drive Key Kit		737953-B21

### HPE Care Pack Services

<b>Installation &amp; Start-up Services</b>		
HPE Installation ML/DL Series 10 Service		U7WZ5E
HPE Startup ML/DL Series 10 Service		U7WZ7E
<b>Foundation Care</b>		
HPE 3 year Foundation Care Next business day ML30 Gen9 Service		H1AS0E
HPE 3 year Foundation Care Next business day with DMR ML30 Gen9 Service		H1AS1E
HPE 3 year Foundation Care 24x7 ML30 Gen9 Service		H1AS6E
HPE 3 year Foundation Care 24x7 with DMR ML30 Gen9 Service		H1AS7E
HPE 3 year Foundation Care Next business day with CDMR ML30 Gen9 Service		H1AX4E
HPE 3 year Foundation Care 24x7 with CDMR ML30 Gen9 Service		H1AX7E
<b>Proactive Care</b>		
HPE 3 year Proactive Care 24x7 ML30 Gen9 Service		H1AS8E
HPE 3 year Proactive Care 24x7 with DMR ML30 Gen9 Service		H1AS9E
HPE 3 year Proactive Care 24x7 with CDMR ML30 Gen9 Service		H1AX8E

## Memory

**NOTE:** Memory configurations listed do not apply to "Factory Integrated Models".

### HPE Standard Memory

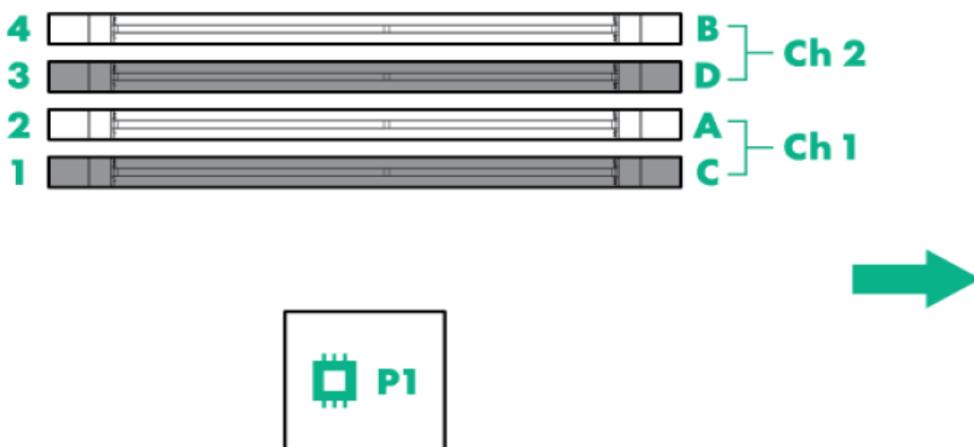
HPE Standard Memory is unique technology which is designed to work on 10/100 series Rack and Tower server. In Gen9 Server HPE Standard Memory has passed HPE's rigorous qualification and test processes. HPE Standard Memory is a certified HPE options and will provide a platform to allow future memory-related support enhancements through HPE Active Health System, System Insight Management and Insight Control management software.

### DDR4 memory population guidelines

For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration

Tool: <http://www.hp.com/go/ddr4memory-configurator>.

### Memory Population guidelines



### General Memory Population Rules and Guidelines:

- . The HPE ProLiant ML30 Gen9 Server has four memory slots
- . There are two channels per server with two DIMM slots per channel
- . Memory channel 1 consists of the two (2) DIMMs that are closest to the processor
- . Memory channel 2 consists of the two (2) DIMMs that are furthest from the processor
- . Support for single/dual-rank 2133 MT/s ECC UDIMM (unbuffered DIMMS)
- . The server supports up to 64 GB (4 x 16-GB) for Unbuffered DIMMs
- . No support for LRDIMMs; RDIMMs; Non-ECC UDIMMs
- . Do not install DIMMs if the processor is not installed
- . Populate DIMMs from heaviest load (double-rank) to lightest load (single-rank)
- . Non-ECC DIMMs are not supported

## Memory

- Always use HPE qualified DIMMs

### Intel Gen9 Supported Memory Bandwidth for HPE ProLiant Gen9 Intel® Xeon® E3-1200v5 Series Processor Family

Memory Bandwidth and Capacity				
[DIMM Type]	Unbuffered with ECC DIMMs (UDIMMs)			
DIMM Rank	Single Rank	Single Rank	Dual Rank	Dual Rank
DIMM Capacity	4GB	8GB	8GB	16GB
DIMM Native Speed (MT/s)	2133	2133	2133	2133
Voltage	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V	Std Voltage 1.2V
SLOTS THAT CAN BE POPULATED				
4 slot servers	4	4	4	4
MAXIMUM CAPACITY (GB)				
	16	32	32	64
POPULATED DIMM SPEED (MT/s)				
1 DIMM Per Channel	2133	2133	2133	2133
2 DIMM Per Channel	2133	2133	2133	2133
3 DIMM Per Channel				

#### DIMM slot and configuration diagram

#### Standard memory replaced with optional memory (1 CPU model)

- Population order; start with "A" first, "B" second, "C" third, etc.
- Population order; start with "A" first, "B" second, "C" third, etc.
- 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 1	1	C	1	
	2	A	2	
	CPU 1			

Memory

	Slot #	population order	CPU 2		
			Slot #	population order	
Chnl 2	3	D	3		
	4	B	4		

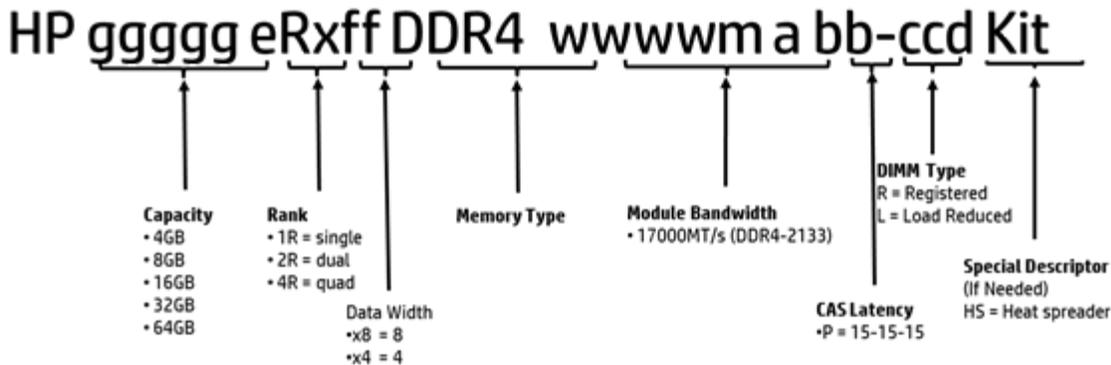
<b>Memory Speed by Processor Model</b>	<b>Processor Models</b>	<b>Supported Memory Speeds</b>
	G4400, G4500, i3-6300, i3-6100, E3-1220v5, E3-1230v5, E3-1240Lv5, E3-1240v5, E3-1270v5	2133MHz

<b>Standard and Maximum Memory Capacity (Pre-configured Models)</b>	<b>Pre-Configured Models</b>	<b>Standard Memory</b>	<b>Maximum Memory Plus Optional Memory</b>	<b>Standard Memory Replaced with Optional Memory</b>
	E3-1220v5		4GB (1x4GB)	52GB (3x16GB, 1x4GB)
E3-1240v5		8GB (1x8GB)	56GB (3x16GB, 1x8GB)	64GB (4x16GB)

DDR4 memory options part number decoder

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

- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB

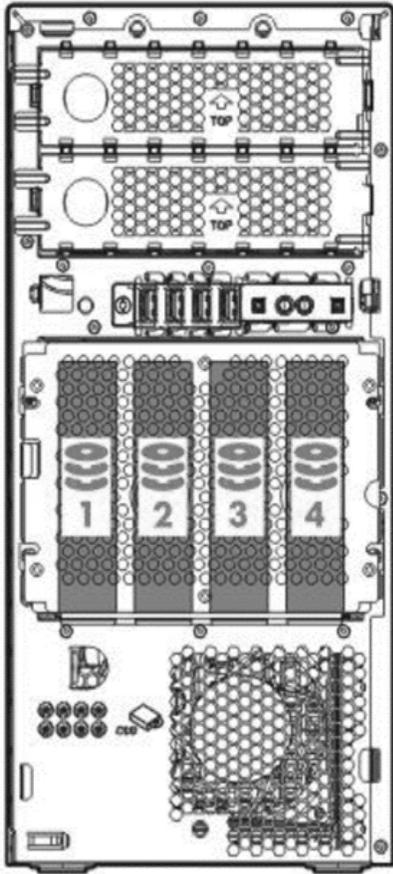


Storage

4-Bay LFF non-hot-plug drive model

1-4

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

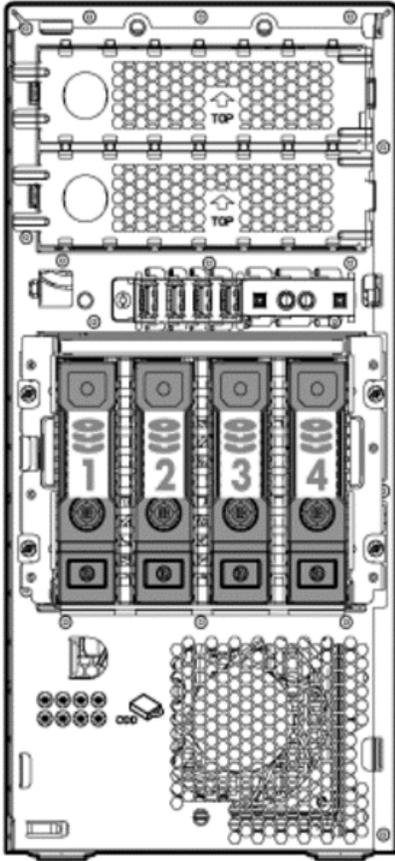


4-bay LFF hot-plug drive model

1-4

4 x LFF SAS/SSD Hot Pluggable Hard Drive Bays

Storage

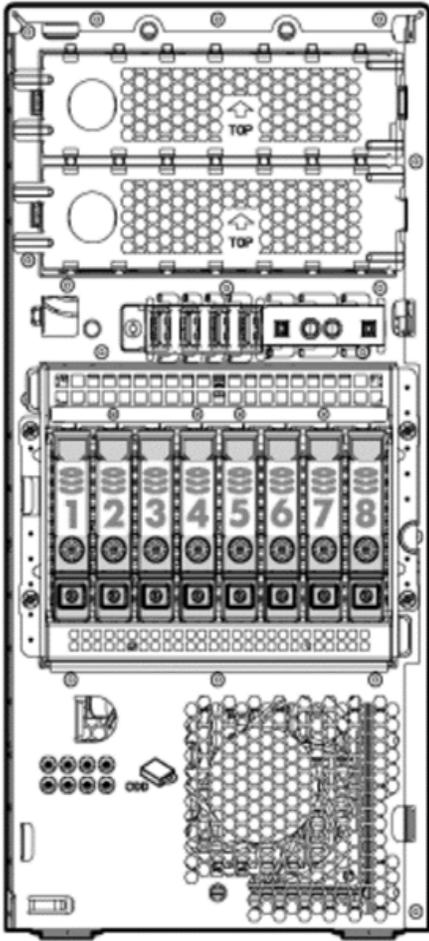


8-bay SFF hot-plug drive model

1 x 8

8 x SFF SATA/SSD Hot Pluggable Hard Drive Bays

## Storage



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### Maximum Storage Capacity -

Total (4 LFF Drive)    32TB  
Total (8 SFF Drive)    16TB

## Technical Specifications

<b>System Unit</b>	<b>Tower Dimensions</b>	14.90(H) x 7.40(W) x 19.35(D) in (37.85 x 18.80 x 49.15 cm)
	<b>Tower Weight</b>	Minimum: 27.1lb(13.56kg) Maximum: 30.8lb(15.4kg)
	<b>Input Requirements</b>	Range Line Voltage: 100 to 120 VAC Rated Input Current: 2.5 to 6 Amps Rated Input Frequency: 47 to 63 Hz Rated Input Power: 412W to 526W at 115 V AC input 412W to 523W at 230 V AC input
	<b>BTU Rating</b>	Maximum: 460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)
	<b>Power Supply Output</b>	Rated Steady-State Power: 350 W (at 115 VAC) 350 W (at 230 VAC) Maximum Peak Power: 350 W (at 115 VAC) 350 W (at 230 VAC)
	<b>System Inlet Temperature</b>	Standard: 0° to 40°C (32° to 104°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed. For approved hardware configurations, the supported system inlet range is extended to be: 5° to 40°C (41° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <a href="http://www.hp.com/servers/ashrae">http://www.hp.com/servers/ashrae</a> . For approved hardware configurations, the supported system inlet range is extended to be: 5° to 45°C (41° to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <a href="http://www.hp.com/servers/ashrae">http://www.hp.com/servers/ashrae</a> .
	<b>Relative Humidity</b>	Extended Ambient Operating Support Non-operating: -30° to 65°C (-22° to 145°F). Maximum rate of change is 20°C/hr (36°F/hr). Operating: 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature. Non-operating: 0 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	<b>Altitude</b>	Operating: 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

## Technical Specifications

	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/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	4.2 Bels (1P LFF Base) 3.7 Bels (1P LFF Performance)
	L pAm	27 dBA (1P LFF Base) 23 dBA (1P LFF Performance)
	<b>Operating</b>	
	L WAd	4.2 Bels (1P LFF Base) 3.8 Bels (1P LFF Performance)
	L pAm	23 dBA (1P LFF Base) 23 dBA (1P LFF Performance)
		<b>NOTE:</b> Configurations tested for 1P LFF Base models include one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.
		<b>NOTE:</b> Configurations tested for 1P LFF Performance models include one (1) 1TB LFF 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 Classification</b>	FCC Rating	Class B
	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>	4 Gb/s
	<b>Storage protocol support</b>	SATA
	<b>SAS/SATA peak data transfer rate</b>	6 Gb/s
	<b>Number of SAS/SATA links</b>	10 links
	<b>SAS/SATA connectivity</b>	2x4 connectors; 2x1 connectors
	<b>Expander support</b>	No

## Technical Specifications

<b>Drives supported (max)</b>	Up to 10 Internal Drives
<b>RAID support</b>	0, 1, 10, 5 SATA
<b>Software management</b>	HPE SSA, SMH, SIM
<b>Warranty</b>	Server warranty
<b>HPE Secure Encryption license</b>	Not Supported
<b>HPE SmartCache License</b>	Not Supported
<b>HPE Smart Storage Administrator</b>	Supported

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<b>HPE Ethernet 1Gb 2-port 332i Adapter</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX		
	<b>Compatibility</b>	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX		
	<b>Ports</b>			
	<b>Data Transfer Method</b>	PCI Express, two lanes (x2)		
	<b>Controller</b>	BCM5720		
	<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	
		1000Base-TX (Half-Duplex)	1000Mb/s per port, 4000 Mb/s combined	
	1000Base-TX (Full-Duplex)	2000Mb/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)		
	10/100/1000 Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)		

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<b>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	Hewlett Packard Enterprise offers end-of-life HPE product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> . To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest Hewlett Packard Enterprise
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## Technical Specifications

sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.hp.com/go/green>. 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.

## Technical Specifications

Date	Version History	Action	Description of Change
17-Dec-2015	From Version 1 to 2	Added	Smart Buy models were added to the NA version.
		Changed	Chipset, Pre-Configure Models, HPE Drives, HPE Power Supplies, HPE Tape Backup, Maximum Storage Capacity, and Technical Specifications were revised.



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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less  
c04834998 - 15475 - North America - V2 - 17-December-2015

  
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