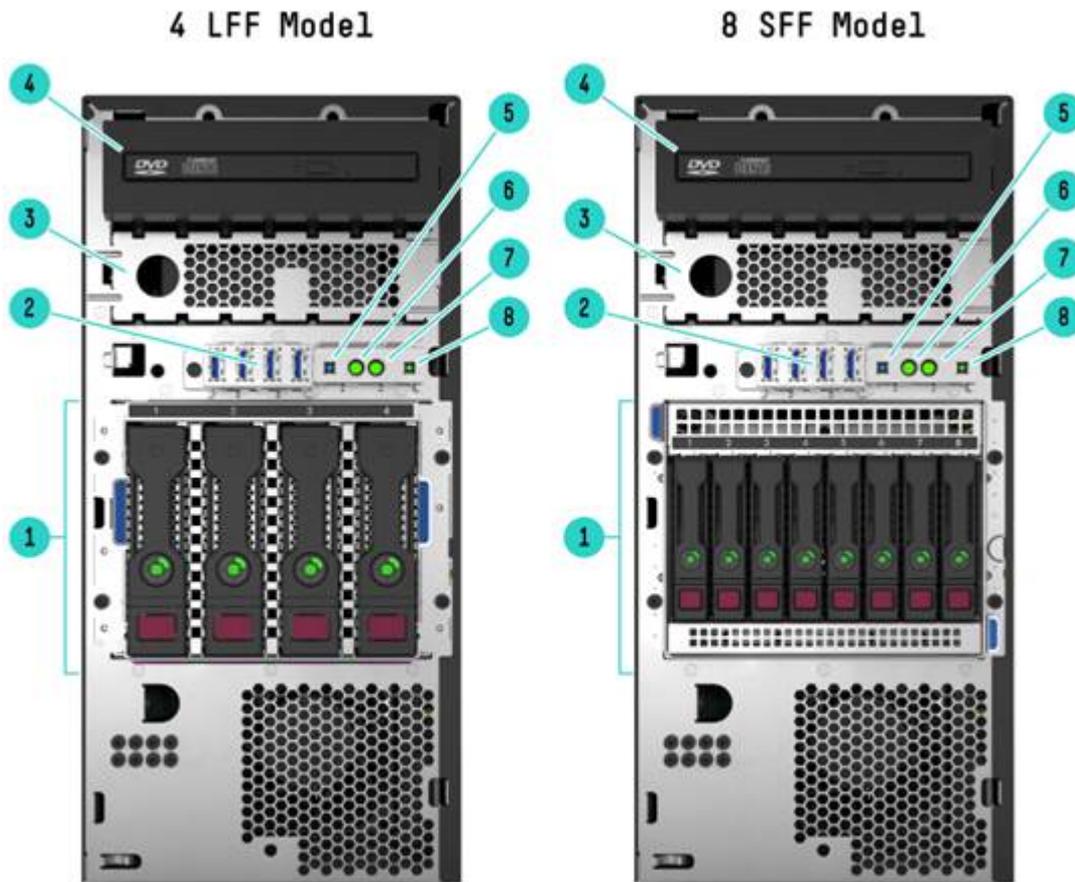


### Overview

#### 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 One of the following depending on model	Model	CPU frequency	Cores	L3 Cache	Power	DDR4 Hz
	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® C230 Series 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

Network Controller	HPE Ethernet 1Gb 2-port NC332i Adapter Model Adapter
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### 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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Storage Controller	Base Models	HPE Dynamic Smart Array B140i Controller
One of the following depending on model	<b>NOTE:</b> B140i can't mix with any standup internal controller.	
	Performance Models	HPE Dynamic Smart Array B140i Controller
	<b>NOTE:</b> B140i can't mix with any standup internal controller.	

Internal Storage Devices	Optical Drives	Optional SATA 9.5mm DVD-ROM Optical Drive Optional SATA 9.5mm DVD RW Optical Drive
	Hard Drives	None ship standard
One of the following depending on model	Hard Drive Bays	4 LFF drive bays (non-hot-plug and hot-plug) 8 SFF hot-plug drive bays
		<b>NOTE:</b> HPE ProLiant ML30 Series servers offer both SFF and LFF versions in CTO. <b>NOTE:</b> 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.

### Standard Features

		CAPACITY	CONFIGURATION
Maximum Internal Storage	Hot Plug LFF SAS	32TB	4 x 8TB
One of the following depending on model	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
	Hot Plug LFF SATA SSD	480GB	4 x 120GB

Power Supply  
One of the following depending on model

HPE 350W ATX-Gen9 Power Supply FIO Kit  
HPE 460W Redundant Power Supply

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 country specific NEMA power cord that allows connection to wall outlets in a home or office. If customers require additional local power cords, they can check the power cord matrix for the appropriate country specific SKU.

### Standard Features

System Fans		Non-redundant	Redundant
One of the following depending on model	1P model system fan	One (1) Non-redundant system fan	
	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)	
	<b>NOTE:</b> The Micro-SD slot is not a hot-pluggable device. Customers should not attempt to plug an 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)	
Operating Systems and Virtualization Software	<u>Microsoft Windows Server</u> <u>Red Hat Enterprise Linux (RHEL)</u> <u>SUSE Linux Enterprise Server (SLES)</u> <u>VMware</u>		
Support for ProLiant Servers	<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.		
Upgradeability	Upgradeable to 4 cores <b>NOTE:</b> Total 2 or 4 cores. Up to 4 DIMM slots available for higher memory capacity Up to 8 SFF Hard Drive Bays; or 4 LFF Hard Drive Bays All PCIe3.0 I/O slots for additional communications and storage expansion Redundant Power Supply Optical Drive Bay <b>NOTE:</b> Up to 2.		
Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0 /3.0 Support		

### Standard Features

#### Graphics

Integrated Matrox G200 video standard

- 1280 x 1024 (32 bpp)
- 1920 x 1200 (16 bpp)

HPE iLO 4 On System Management Memory

- 16 MB Flash
- 256 MB DDR 3 with ECC (112 MB after ECC and video)

#### HPE Server UEFI/Legacy ROM

HPE Server UEFI /Legacy ROM

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
- 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.

#### Form Factor One of the following depending on model

Micro ATX Tower (4U) chassis with feet/bezel:

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

### Standard Features

Embedded Management	HPE Integrated Lights-Out (HPE iLO)	Monitor your servers for ongoing management, service alerting, reporting and remote management with HPE iLO. Learn more at <a href="http://www.hp.com/go/ilo">http://www.hp.com/go/ilo</a> .
	UEFI	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> .
	RESTful API	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> .
	Intelligent Provisioning	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> .
	Embedded Remote Support	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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Server utilities	Smart Update	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> .
	HPE Systems Insight Manager (HPE SIM)	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> .
	Scripting Tool Kit and Windows PowerShell	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> .
	RESTful Interface Tool	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>
	HPE iLO Mobile Application	Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: <a href="http://www.hp.com/go/ilo/mobileapp">http://www.hp.com/go/ilo/mobileapp</a> .
	HPE Insight Online	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

### Standard Features

<http://www.hp.com/go/insightonline/info>.

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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 <a href="http://www.hp.com/go/iLO/essentials">http://www.hp.com/go/iLO/essentials</a> .
	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 <a href="http://www.hp.com/go/iLO/scale-out">http://www.hp.com/go/iLO/scale-out</a> .
	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 <a href="http://www.hp.com/go/ioloadvanced">http://www.hp.com/go/ioloadvanced</a> .

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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 <a href="http://www.hp.com/go/insightcontrol">http://www.hp.com/go/insightcontrol</a> .
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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

### Optional Features

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. 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

### Service and Support

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 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>

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### 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 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.

**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.

	Base Models	Performance Models
[SKU Number]	824379-xx1	830893-xx1
Model Name	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
Processor	Intel® Xeon® E3-1220v5	Intel® Xeon® E3-1240v5
Number of Processors	One	
Memory	4GB (1x4GB UDIMMs, 2133 MHz)	8GB (1x8GB UDIMMs, 2133 MHz)
Network Controller	Broadcom 5720 Dual-port 1GbE	
Storage Controller	HPE Dynamic Smart Array B140i	
Hard Drive	None ship standard; includes 2 LFF hard drive blanks	
Internal Storage	4 LFF HDD Bays (Hot Plug)	
Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)	
Optical Drive	None	
PCI-Express Slots	4 PCIe 3.0 slots	
Power Supply	(1) 350W ATX Power Supply	(1) 460W Redundant Power Supply
Fans	1 non hot plug, non-redundant	
Management	iLO Management (standard), Intelligent Provisioning (standard), iLO Advanced (optional), Insight Control (optional)	
Form Factor	Tower (4U)	
Warranty	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.	

### Pre-configured Models

Country Code	xx1 = B21	Worldwide
Key	xx1 = 291	Japan
	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 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)

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

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

### Configuration Information - Factory Integrated Models

**HPE Processors** Select one processor from Core options-Processor section below  
ML30

- Select one xxxxxx-L21.
- Only one processor 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® 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** Select one or more memory from Core options-Memory section below,

- HPE memory from previous generation servers are not qualified or warranted with this HPE ProLiant Server.
- HPE Standard Memory (UDIMM) is required to realize the memory performance improvements and enhanced functionality listed in this document for this HPE ProLiant Server.
- With one processor installed, four DIMMs slots are available.
- For more information on ProLiant Energy Efficient Features, see: <http://www.hp.com/go/proliant-energy-efficient>.
- 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>.

**HPE Power Supplies** 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.hp.com/go/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

### Configuration Information - Factory Integrated Models

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

- Please see the QuickSpecs for Technical Specifications and additional information: <http://www.hp.com/go/ProLiantNICs>.
- 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.

**HPE Drives** 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".

**HPE Graphics Options** 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.hp.com/go/hppoweradvisor>.
- This section may contain FIO options, please see HPE Computation & Graphics Accelerators section below.

**HPE Unique Options** 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.

**HPE Cooling Options** 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.

**HPE Storage Controllers** 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 a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

HPE Unique Options	HPE ML30 Gen9 Slim Optical Disk Drive FIO Enablement Kit	820288-B21
	HPE ML30 Gen9 Front PCI FIO Redundant Fan Kit	820290-B21
	<b>NOTE:</b> Required for any PCI-E card.	
	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
	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

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

### HPE Memory

	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

### Core Options

HPE Optical Drives	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 ML30 Gen9 Slim Optical Disk Drive FIO Enablement Kit	820288-B21
	<b>NOTE:</b> Max=1 if selected together with 460W Hot Plug Power Supply.	

### 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

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

**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.

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

### Core Options

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:</b> 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.	
SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives	
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:</b> 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.	
SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives	
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
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
<b>NOTE:</b> 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.	

### Core Options

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
<b>NOTE:</b> 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
<b>NOTE:</b> 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
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

### Core Options

6G SATA Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives	
HPE 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC	691852-B21
Enterprise Mainstream 3yr Wty Solid State Drive	
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	718171-B21
Boot 3yr Wty Solid State Drive	
Hard Drive 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	
	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
<b>NOTE:</b> Max=1 if selected with another x8 device.		

HPE Power Supplies	HPE Entry-Level Power Supplies	
	HPE 460W CS Gold Ht Plg Power Supply Kit	503296-B21
	<b>NOTE:</b> 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 ML30 Gen9 350W E-star 2.0 FIO Power Supply Kit	822384-B21
<b>NOTE:</b> Max=1.		
HPE ML30 Gen9 4U Redundant FIO Power Supply Enablement Kit	822607-B21	
<b>NOTE:</b> Required for 460W Hot Plug Power Supply.		
Max=1		

HPE Computation and Graphics Accelerators	HPE NVIDIA Quadro K2200 Graphics Accelerator	J0G89A
	<b>NOTE:</b> An x16 device cannot be selected together with GPU.	

HPE Cooling Options	HPE ML30 Gen9 Front PCI FIO Redundant Fan Kit	820290-B21
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### 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.

HPE Insight Software	HPE Insight Control	
	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
	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

**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\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html).

Embedded Management	HPE iLO Advanced	
	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	

### Additional Options

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

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

### HPE Storage Controllers

#### SAS Controllers

HPE Smart Array P440/2GB FBWC 12Gb 1-port Int SAS Controller 820834-B21

**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

Servers

**NOTE:** Max=1.

HPE Smart Host Bus Adapters

### Additional Options

HPE H240 12Gb 2-ports Int Smart Host Bus Adapter	726907-B21
<b>NOTE:</b> Device Count - This controller can support up to 8 internal SAS/SATA devices	
1pc required per H240 controller for HPE 4LFF Mod-X	
2pcs required per H240 controller for 8SFF Mod-X	
Max=1	
HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter	726911-B21
<b>NOTE:</b> Max=1.	
HPE ML110 Gen9 Mini SAS H240 Cable Kit	789648-B21
<b>NOTE:</b> 1pc required per H240 controller for HPE 4LFF Mod-X.	
2pcs required per H240 controller for 8SFF Mod-X.	
Battery Holder	
HPE ML150 Gen9 Smart Storage Battery Holder Kit	786710-B21
<b>NOTE:</b> Max=1.	

HPE Tape Backup	<p><b>NOTE:</b> For the complete range of tape drives, autoloaders, libraries and media see: <a href="http://www.hp.com/go/tape">http://www.hp.com/go/tape</a>. For hardware and software compatibility of HPE tape backup products see: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a> and <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a>.</p> <p><b>NOTE:</b> Must select SAS controller to support internal SAS tape drives.</p> <p><b>NOTE:</b> Tape drive and HDD total amount can't exceed SAS controller support qty.</p> <p><b>NOTE:</b> Limited to H240 when select Tape Drive.</p> <p>Tape Drives</p>	
	HPE StoreEver LTO-6 Ultrium 6650 SAS External Tape Drive	EH964A
	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 Disk Storage Systems	Disk Enclosures	
	HPE D6000 Dual I/O Module Disk Enclosure	QQ695A
	<b>NOTE:</b> See the D6000 Disk Enclosure QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: <a href="http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html">http://h18000.www1.hp.com/products/quickspecs/14419_div/14419_div.html</a> (Worldwide).	
	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

### Additional Options

	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
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HPE USB and SD Options	HPE Enterprise Mainstream Flash Media Kits for Memory Cards	
	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
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HPE Care Pack Services	Installation & Start-up Services	
	HPE Installation ML/DL Series 10 Service	U7WZ5E
	HPE Startup ML/DL Series 10 Service	U7WZ7E
	Foundation Care	
	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
	Proactive Care	
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".

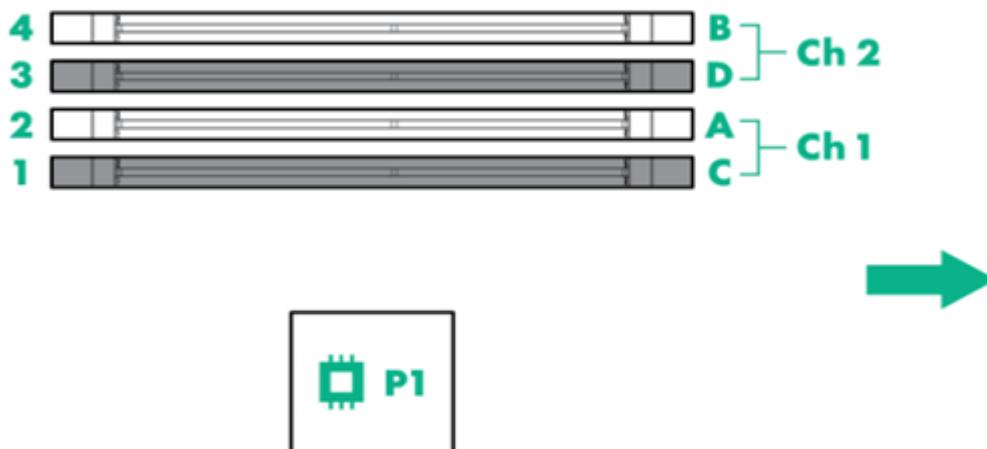
#### HPE Standard Memory

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
- . Always use HPE qualified DIMMs

### Memory

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

### Memory

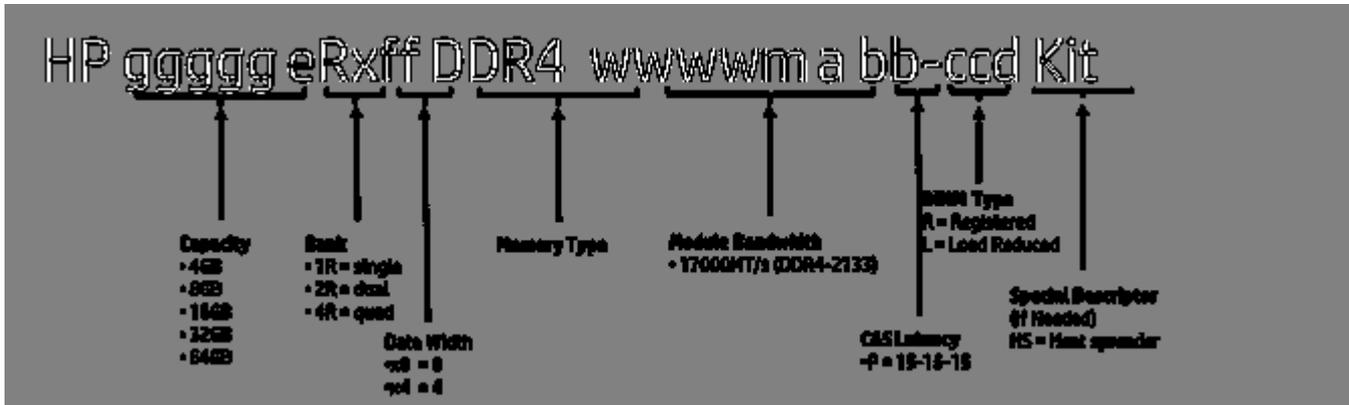
Memory Speed by Processor Model	Processor Models	Supported Memory Speeds
	G4400, G4500, i3-6300, i3-6100, E3-1220v5, E3-1230v5, E3-1240Lv5, E3-1240v5, E3-1270v5	2133MHz

Standard and Maximum Memory Capacity (Pre-configured Models)	Pre-Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
	E3-1220v5	4GB (1x4GB)	52GB (3x16GB, 1x4GB)	64GB (4x16GB)
	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.

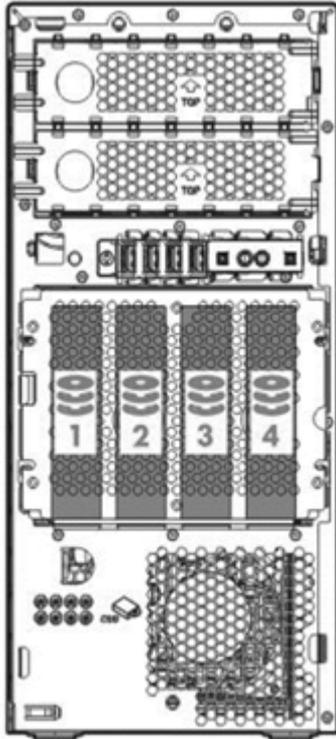
- 2GB = 2,048MB
- 4GB = 4,096MB
- 8GB = 8,192MB
- 16GB = 16,384MB
- 32GB = 32,768MB
- 64GB = 65,536MB



### Storage

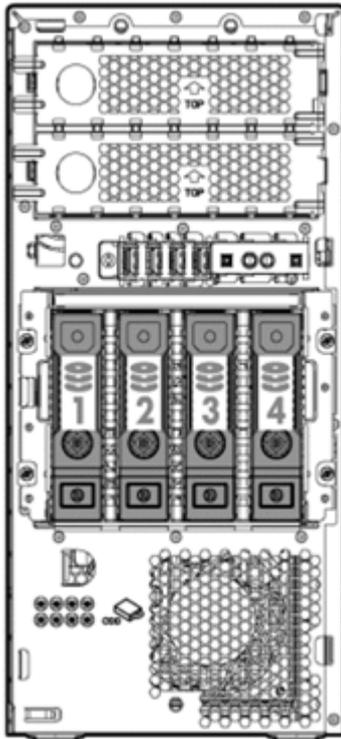
4-Bay LFF non-hot-plug drive model 1-4

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

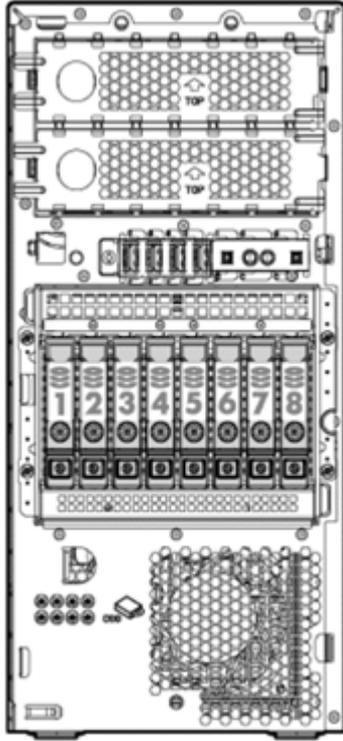


### Storage

8-bay SFF hot-plug drive model

1 x 8

8 x SFF SATA/SSD Hot Pluggable Hard Drive Bays



Maximum Storage Capacity -

Total (4 LFF Drive) 24TB

Total (8 SFF Drive) 16TB

### Technical Specifications

System Unit	Tower	14.90(H) x 7.40(W) x 19.35(D) in (37.85 x 18.80 x 49.15 cm)
	Dimensions	
	Tower Weight	Minimum: 27.1lb(13.56kg) Maximum: 30.8lb(15.4kg)
	Input Requirements	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
	BTU Rating	Maximum 460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)
	Power Supply Output	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)
	System Inlet Temperature	Standard Operating Support 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> .
	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).
	Relative Humidity	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.

### Technical Specifications

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

Acoustic Noise Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

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)

Operating

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)

**NOTE:** Configurations tested for 1P LFF Base models include one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

**NOTE:** Configurations tested for 1P LFF Performance models include one (1) 1TB LFF SATA Midline HDD and Windows 2012 Enterprise 64-bit.

**NOTE:** The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Emissions Classification	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

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

### Technical Specifications

HPE Dynamic Smart Array B140i Controller	Number of PCI links	Four
	PCI link rate	4 Gb/s
	Storage protocol support	SATA
	SAS/SATA peak data transfer rate	6 Gb/s
	Number of SAS/SATA links	10 links
	SAS/SATA connectivity	2x4 connectors; 2x1 connectors
	Expander support	No
	Drives supported (max)	Up to 10 Internal Drives
	RAID support	0, 1, 10, 5 SATA
	Software management	HPE SSA, SMH, SIM
	Warranty	Server warranty
	HPE Secure Encryption license	Not Supported
	HPE SmartCache License	Not Supported
	HPE Smart Storage Administrator	Supported

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HPE Ethernet 1Gb 2-port 332i Adapter	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX
	Ports	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	PCI Express, two lanes (x2)
	Controller	BCM5720
	Network Transfer Rate	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) 1000Mb/s per port, 4000 Mb/s combined 100Base-TX (Full-Duplex) 2000Mb/s per port, 8000 Mb/s combined

### Technical Specifications

Connector	RJ-45	
Cable Support	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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### Environment-friendly Products and Recycling Approach

#### End-of-life Management and Recycling

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: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest Hewlett Packard Enterprise 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.

### Summary of Changes



hp.com/qref/ml30gen9



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

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