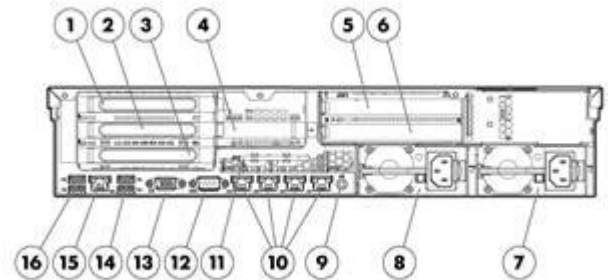
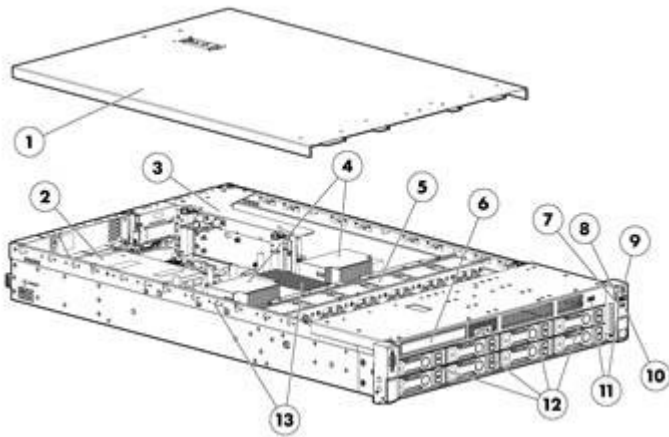


### Overview

The HP ProLiant DL380e Gen8 sets the next generation standards of 2U 2-socket rack servers for the industry. With enhanced configuration flexibility, unmatched performance, and leading energy efficient design the DL380e Gen8 offers the perfect solution for the dynamic compute and storage requirements of today's demanding datacenters.



#### Front View:

1. Quick removal access panel
2. Redundant Hot Plug Power Supplies(upgradeable option)
3. Removable Riser Cage assembly
4. Up to 2 Intel E5-2400 Series Processors
5. Removable Hot Plug Fans modules, (optional, full N+1 redundancy)
6. Optical Disk Drive Bay
7. Health LED
8. Network activity LED
9. Power On /Standby button and system power LED button
10. Unit ID LED
11. USB connectors
12. Hard Drive bays
13. 12 DIMM slots: DDR3 Registered(RDIMM), Load Reduced (LRDIMM) or Unbuffered(UDIMM) memory

#### Rear View:

1. Slot1 PCIe3 x8 (4, 1)
2. Slot2 PCIe3 x16 (8, 4, 1)
3. Only for riser board without SAS support: Slot3 PCIe3 x8 (8, 4, 1)
4. Slot4 PCIe2 x8 (4, 1)
5. Slot5 PCIe3 x16 (16, 8, 4, 1) (optional)
6. Slot6 PCIe3 x16 (8, 4, 1) (optional)
7. Power Supply bay1 (Primary Power Supply)
8. Power Supply bay 2 (Shown populated: optional)
9. Unit ID LED/Button
10. HP Ethernet 1Gb 4-port 366i Adapter (4 x 1GbE)
11. Service tool
12. Serial connector
13. Video connector
14. USB connectors (2)
15. iLO connector
16. USB connectors (2)

### Standard Features

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

#### Processor

One of the following depending on Model

#### Entry Processors

**NOTE:** All support up to 1066MHz DDR3 memory speeds.

Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066)

Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066)

#### Base Processors

**NOTE:** All support up to 1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo

Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo

Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/7.2GT-s QPI/60W, DDR3-1333, Turbo2-3/3/4/4/5/5)Turbo

Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)Turbo

#### Performance Processors

**NOTE:** All support up to 1600MHz DDR3 memory speeds.

Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/8GT-s QPI/95W,DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)Turbo+

Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)Turbo+

Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/8GT-s QPI/70W, DDR3-1600, Turbo2-2/2/3/3/4/4/5/5)Turbo+

**NOTE:** HT indicates that the processor model supports Intel® Hyper-Threading Technology.

**NOTE:** Turbo2 indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 8, 7, 6, 5, 4, 3, 2 and 1 cores active.

**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.

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

**NOTE:** For the Intel® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

#### Cache Memory

One of the following depending on Model

20MB (1x20MB) Level 3

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

15MB (1x15MB) Level 3

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

10MB (1x10MB) Level 3

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

**NOTE:** All processor models above list the L3 Cache associated with that particular processor.

### Standard Features

#### Chipset

Intel® C600 Series Chipset

Intel® E5-2400 Processor Family

**NOTE:** For more information regarding Intel chipsets, please see the following URL:  
<http://www.intel.com/products/server/chipsets/>.

#### Upgradeability

Upgradeable to 2 processors (16 Cores)

Up to 12 DIMM slots available

**NOTE:** To take advantage of DIMMs 7-12, a second processor must be installed

10 Gigabit networking options via standup card

Optional 2 slot riser (x16, x8)

**NOTE:** To take advantage of the additional 2 PCI slot upgrade, a second processor must be installed.

Redundant Power Supply

Redundant Fan

Optical Drive (8SFF/8LFF only)

#### On System Management Processor

HP iLO (Firmware: HP iLO 4)

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

#### Memory Protection

Advanced ECC

Online Spare

Lock-step mode

#### Memory

One of the following depending on Model

Type	HP SmartMemory DDR3 Load Reduced (LRDIMM), Registered (RDIMM) or Unbuffered (UDIMM)
DIMM Slots Available	12 (6 DIMM slots per processor, 3 channels per processor, 2 DIMMs per channel)
Standard (Entry Models - SATA)	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
Standard (Entry Models - SAS)	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
Standard (Base Models - LFF)	8GB (2 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
Standard (Base Models - SFF)	8GB (2 x 4GB) Registered DIMMs PC3-10600R (1333MHz)
Standard (High Performance Models)	24GB (6 x 4GB) Registered DIMMs PC3-12800R (1333MHz)
Standard (Storage Models - LFF)	12GB (3 x 4GB) Registered DIMMs PC3-12800R (1333MHz)
Standard (Storage Models - SFF)	12GB (3 x 4GB) Registered DIMMs PC3-12800R (1333MHz)

### Standard Features

Maximum Capacity (LRDIMM)	384GB (12 x 32GB LRDIMM @1333MHz)
Maximum Capacity (RDIMM)	192GB (12 x 16GB RDIMM @1600MHz or 1333MHz)
Maximum Capacity (UDIMM)	96GB (12 x 8GB UDIMM @1333MHz)

**NOTE:** HP memory from previous generation servers are not fully compatible with the HP ProLiant DL380e Gen8 Server.

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html)

**NOTE:** If only one processor is installed, only half the DIMM slots are available

**NOTE:** UDIMM max DIMM population is 12

**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

### Network Controller

The HP ProLiant DL380e Gen8 server offers the customer a quad-port NIC standard with the option to upgrade with a variety of networking options.

HP Ethernet 1Gb 4-port 366i Adapter

### Expansion Slots

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	1	PCIe Gen3.0	X4	X8	Full Length, Full Height Slot	
	2	PCIe Gen3.0	X8	X16	Half Length, Full Height Slot	
	3	PCIe Gen3.0	X8	X8	Half Length, Full Height Slot	
	4	PCIe Gen2.0	X4	X8	Low Profile	
<b>** Indicates the number of physical electrical lanes running to the connector.</b>						
Primary Riser (Riser with SAS)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	1	PCIe Gen3.0	X4	X8	Full Length, Full Height Slot	
	2	PCIe Gen3.0	X8	X16	Half Length, Full Height Slot	
	3	PCIe Gen3.0	NA	NA	NA	Not available for Riser with SAS
	4	PCIe Gen2.0	X4	X8	Low Profile	

**\*\* Indicates the number of physical electrical lanes running to the connector.**

**NOTE:** This riser kit comes with B320i Smart Array controller which provides support for up to 8 SAS or SATA drives and requires a SAS license key to support SAS drives.

### Standard Features

Secondary Riser (Optional)	Expansion Slots #	Technology	Bus Width**	Connector Width	Form Factor	Notes
	5	PCIe 3.0	X16	X16	Full length, full height slot	
	6	PCIe 3.0	X8	X16	Half length, full height slot	

\*\* Indicates the number of physical electrical lanes running to the connector.

**NOTE:** When populating slots on secondary riser (p/n 661628-B21), a second processor must be installed.

**NOTE:** Slot 5 supports up to 225w PCIe cards. An additional Graphic Card Power Adapter Kit is required (663282-B21). See Option Section below for offering.

**NOTE:** Adding the rear drive cage negates the space required for secondary optional riser slots 5 & 6.

### HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU)).

**NOTE:** For further information, please refer to HP's RBSU (ROM based setup utility) user guide: [www.hp.com/support/rbsu](http://www.hp.com/support/rbsu).

### Standard Features

#### Storage Controller

One of the following depending on Model

Entry Model - SATA	HP Dynamic Smart Array B120i Controller <b>NOTE:</b> Provides support for up to 6 SATA drives and data transmission speeds up to 3Gb/s
Entry Model - SAS	HP Dynamic Smart Array B320i/512MB FBWC Controller <b>NOTE:</b> Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
Base Models - LFF	HP Dynamic Smart Array B320i/512MB FBWC Controller <b>NOTE:</b> Provides support for up to 8 SATA drives, data transmission speeds up to 6Gb/s and requires purchase of SAS license key for SAS mode.
Base Model - SFF	HP Dynamic Smart Array B320i/512MB FBWC Controller <b>NOTE:</b> Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
High Performance Models	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0)
Storage Models - LFF	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0)
Storage Models - SFF	HP Smart Array P420/2GB FBWC Controller (RAID 0/1/1+0/5/5+0)

#### Internal Storage Devices

One of the following depending on Model

Diskette Drive	None
Optical Drive	Optional DVD-ROM, DVD-RW <b>NOTE:</b> This option available with all 8SFF or 8LFF drive bay models.
Hard Drives	None ship standard
Drive Bays	8 SFF drive bays total with Optical Bay Optional: +8SFF drive bay (total of 16SFF drive bays) <b>NOTE:</b> The Optical Drive bay is not available with +8SFF drive bay optional upgrade. 8 LFF drive bays total with Optical Bay 12 LFF drive bays total without Optical Bay Optional: +2 Rear Drive Bays (LFF or SFF) 25 SFF drive bays total without Optical Bay Optional: +2 Rear Drive Bays (LFF or SFF) <b>NOTE:</b> Drive cage changes are not supported except for adding +8SFF to an existing 8SFF drive cage. <b>NOTE:</b> Adding the rear drive cage negates the space required for secondary optional riser slots 5 & 6. <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: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.

### Standard Features

<b>Maximum Internal Storage</b>	Hot Plug SFF SAS	32.4TB	27 x 1.2TB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug SFF SATA	27.0TB	27 x 1TB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug LFF SAS	56.0TB	14 x 4TB (with 12LFF drive cage + Rear 2LFF drive cage)
	Hot Plug LFF SATA	56.0TB	14 x 4TB (with 12LFF drive cage + Rear 2LFF drive cage)
	Hot Plug SFF SAS SSD	21.6TB	27 x 800GB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug SFF SATA SSD	21.6TB	27 x 800GB (with 25SFF drive cage + Rear 2SFF drive cage)
	Hot Plug LFF SATA SSD	11.2TB	14 x 800GB (with 12LFF drive cage + Rear 2LFF drive cage)

### Interfaces

Serial	1
Video	2 (1 front, 1 back) not active simultaneously
LOM Network Ports	4x1GbE ports
HP iLO Remote Management Network Port	1 Gb Dedicated
SD slot	1 Internal Secure <b>NOTE:</b> The SD slot is not a hot-pluggable device. Customers should not attempt to plug an SD card into the SD slot while the server is powered.
USB 2.0 Ports	Up to 7 total: up to 2 front, 4 back, 1 internal (secure) <b>NOTE:</b> 12LFF and 25SFF drive cage models have 1 front, 4 back and 1 internal USB ports.

### Industry Standard Compliance

ACPI 2.0b Compliant  
PCIe 3.0 Compliant  
PXE Support  
WOL Support  
Microsoft® Logo certifications  
USB 2.0 Compliant

### Server Power Cords

High voltage power cord ships standard with all part numbers.  
**NOTE:** HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cord that connects to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to power distribution units (PDUs) in data center racks and now ship standard with a PDU 6-foot C-14 to C13 power cord (AOK02A). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 6-foot NEMA 5-15 to C13 power cord must be ordered separately (AF556A). See Power Cords section for Worldwide Power Cord options.

### Standard Features

#### Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient) or [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at: [http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

#### Common Slot Power Supply

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Power Discovery Services, a solution that creates an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's Power Discovery Services, go to: [www.hp.com/go/ipd](http://www.hp.com/go/ipd). It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

**NOTE:** The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on [www.80Plus.org](http://www.80Plus.org).

Redundant Power: Optional (1+ 1) power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at: [http://h18000.www1.hp.com/products/quickspecs/14209\\_na/14209\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html)



### Standard Features

#### System Fans

One of the following depending on Model

4 Hot-Plug Non-redundant Fans ship standard in 1P Models

- 1P: 4 fans - non-redundancy
- 1P: 5 fans - redundancy

6 Hot-plug Redundant Fans ship standard in 2P Models

- 2P: 5 fans - non-redundancy
- 2P: 6 fans - redundancy

**NOTE:** Customers may separately purchase redundant fans with the 667855-B21 option kit. Additional fans to support redundancy are also included in -B21 processor option kits when upgrading from one processor to two processor.

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#### Required Cabling

For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl380e-gen8](http://www.hp.com/servers/dl380e-gen8).

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

[Microsoft Windows Server](#)  
[Red Hat Enterprise Linux \(RHEL\)](#)  
[SUSE Linux Enterprise Server \(SLES\)](#)  
[Oracle Solaris](#)  
[VMware](#)

**NOTE:** For more information on HP'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: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/DL380eGen8>

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#### Graphics

Integrated Matrox G200 video standard

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

HP iLO 4 On System Management Memory

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

### Standard Features

#### Form Factor

One of the following depending on Model

2U Rack form factor

Entry models ship with fixed rails.

All other models ship with sliding rails and cable management system.

8 SFF Drive Bay Version:

3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

8 LFF Drive Bay Version:

3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length

12 LFF Drive Bay Version:

3.44 (8.75cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length

25 SFF Drive Bay Version:

3.44 (8.75 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

#### On System Management

HP iLO Management Engine

HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:

- **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
- **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
- **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
- **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed.
  - To start Intelligent Provisioning:
    - Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
    - Please go to the Intelligent Provisioning website at [www.hp.com/go/intelligentprovisioning](http://www.hp.com/go/intelligentprovisioning) for additional information and to view usage videos.
    - Use the Service Pack for ProLiant (SPP) at [www.hp.com/go/spp](http://www.hp.com/go/spp) to get firmware and software updates.
- **HP iLO Mobile App:** Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: [www.hp.com/go/ilo/mobileapp](http://www.hp.com/go/ilo/mobileapp)

**NOTE:** For more information, visit: <http://www.hp.com/go/ilo> or HP iLO Management Engine technologies whitepaper

### Standard Features

#### HP Insight Management HP Service Pack for ProLiant (SPP)

HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant.

The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

**NOTE:** The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from [www.hp.com/go/spp/download](http://www.hp.com/go/spp/download). More information can be found: [www.hp.com/go/spp](http://www.hp.com/go/spp) and <http://www.hp.com/go/hpsum>

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#### Security

Power-on password  
Serial interface control  
Administrator's password

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### Standard Features

#### Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP 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 HP 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 HP 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

<b>HP Insight Management</b>	HP Insight Control	<p>HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. HP Insight Control also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see <a href="http://www.hp.com/go/insightcontrol">http://www.hp.com/go/insightcontrol</a>.</p> <p>HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: <a href="http://www.hp.com/services/insight">http://www.hp.com/services/insight</a>.</p>
	HP iLO Essentials	<p>HP iLO Essentials license ideal for small and medium business customers. The specially created HP iLO Essentials (a subset of iLO Advanced functionality) saves SMB customers time and money, by ease of remote server set up through the interactive virtual media, lowering operational costs with remote access via the Integrated Remote Console, and faster time to resolution with email-based proactive notifications. With this newly designed HP iLO Essentials license SMB customers now have the option of a server management package solely design and priced just right for their IT environments. HP iLO Essentials is available on all HP ProLiant Gen8 e-series making this an ideal solution for small business owners. For more information, see: <a href="http://www.hp.com/go/iLO/essentials">http://www.hp.com/go/iLO/essentials</a></p>
	HP iLO Advanced	<p>HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: <a href="http://www.hp.com/go/iLOADVANCE">http://www.hp.com/go/iLOADVANCE</a></p>
	HP Matrix Operating Environment	<p>The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business.</p> <p>The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS).</p>

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

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### High Performance Clusters

#### HP Cluster Platforms

HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. <http://www.hp.com/go/clusters>

### Optional Features

HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. <a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a>
HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <a href="http://www.hp.com/go/cmu">http://www.hp.com/go/cmu</a>
HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported option to HP Insight CMU, for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler and Platform Application Center, as well as the HP-MPI parallelization library. <a href="#">HP HPC Linux Value Pack</a>

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

- **Data Archive and Migration Software**

HP'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)**

HP'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**

HP 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 HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.

- **HP StoreVirtual VSA**

With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

**NOTE:** For more information available Storage Software including QuickSpecs, please see: [www.hp.com/go/storage/software](http://www.hp.com/go/storage/software).

### Optional Features

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#### **HP Insight Online**

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime.

[www.hp.com/go/insightonline](http://www.hp.com/go/insightonline)

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#### **HP Proactive Insight experience**

Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: [www.hp.com/go/proactiveinsightexperience](http://www.hp.com/go/proactiveinsightexperience)

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#### **Factory Express Portfolio for Servers and Storage**

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, EVA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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>.

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#### **HP Simple Configurator**

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 HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

### Service and Support

#### Service and Support

#### **HP Technology Services for Industry Standard Servers and BladeSystem**

Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

#### **What HP ProLiant and BladeSystem Services can do for you**

HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for their business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help deliver high levels of application availability through proactive service management and advanced technical response

You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs.

HP Technology Services meets business challenges with services offered in three support recommendations - **Optimized Care, Standard Care, and Basic Care** - available for each product group. Such support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software designed to meet your specific needs.

All three service recommendations include support services from the broader portfolio of Foundation Care and Proactive Care services.

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#### Optimized Care

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

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP 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>

##### **HP Installation and Startup for Insight Control Software / HP SIM**

Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers  
<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

##### **3-Year HP 24x7 4 hour Response, Proactive Care**

Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your call and end to end until resolved, delivering a single point of contact for you. Helping you to resolve your hardware and software issues and minimizing downtime in your business critical environment.

**Additional Services:** Factory Express, Education Services, Proactive Select - 30 Credit Package



### Service and Support

#### Standard Care

**Standard Care: Service recommendation that maintains high level of server availability**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP 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>

##### **HP Installation and Startup for Insight Control Software / HP SIM**

Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

##### **3-Year HP 24x7 4 hour Response, Collaborative Support**

Provides problem resolution support across the stack of HW, firmware, and HP and 3rd party SW. In case the issue is with 3rd party SW, HP does known issue resolution. If HP cannot solve the issue, it will contact the third-party vendor and create a problem incident on your behalf.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf>

**Additional Services:** Software support service with 24X7 availability with a 2 hour response, Training courses on Microsoft, Linux (Red Hat and SUSE), VMware, and HP Insight Software, 10 Proactive Select Credit package, Factory Express

<http://www8.hp.com/us/en/business-services/it-services.html?compURI=1078865>

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#### Basic Care

**Basic Care: delivers minimum recommended support service level**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP 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>

##### **3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service**

Provides you with rapid remote support and if required an HP authorized technical engineer will be on site 24X7 begin hardware maintenance service within 4 hours of the service request being logged

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf>

##### **3-Year , HP 24x7 Software Support for Insight Control**

Provides remote 3-year software support service that delivers comprehensive software services, including access to HP technical resources and software updates

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

**Additional Services:** Factory Express, Education Services, Proactive Select - 10 Credits

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#### Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more

<http://www.hp.com/go/insightremotesupport>

### Service and Support

**HP Support Center**

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP'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.

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

\*HP' Support Center Mobile App is subject to local availability

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**Warranty / Service Coverage**

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

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**For more information**

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>

### Pre-configured Models

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

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

**NOTE:** HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.

**NOTE:** 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: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.

**NOTE:** When the SAS-enabled riser board with the Smart Array B320i controller is installed in the server, the embedded Smart Array B120i controller is automatically disabled. In the absence of another storage controller or an expander backplane, front drives operate in AHCI or Legacy mode. In these two modes, the drives are not part of a hardware RAID or a member of a logical drive. The Locate, Drive status, and Do not remove LEDs in the drive carrier are disabled.

### Entry Models - SATA

<b>HP ProLiant DL380e Gen8 E5-2403 1P 4GB-R Hot Plug 4 LFF 460W PS Entry Server</b> 648255-001	<b>Processor(s)</b>	(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	<b>Cache Memory</b>	10MB (1x10MB) Level 3
	<b>Memory</b>	4GB (1 x 4GB) Registered DIMMs PC3-10600R (1333MHz) <b>NOTE:</b> Memory runs at 1066MHz speed due to processor.
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 366i Adapter
	<b>Storage Controller</b>	HP Dynamic Smart Array B120i Controller <b>NOTE:</b> Provides support for up to 6 SATA drives and data transmission speeds up to 3Gb/s Greater than 4 drives requires an additional cable (see p/n 675856-B21)
	<b>Hard Drive</b>	None ship standard; includes 7 LFF hard drive blanks <b>NOTE:</b> This model comes with 7 HDD blanks if no HDD is ordered.
	<b>Internal Storage</b>	8 LFF HDD Bays <b>NOTE:</b> This model comes with 8LFF Chassis.
	<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)
	<b>PCI-Express Slots</b>	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	<b>Power Supply</b>	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	<b>Fans</b>	4 Hot-Plug Non-redundant Fans <b>NOTE:</b> Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations.

### Pre-configured Models

#### Warranty

Please refer to your installation instructions for proper tools and number of people to use for any installation.

Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

### Entry Models - SAS

**HP ProLiant DL380e Gen8 E5-2403 1P 4GB-R Hot Plug 8 SFF 460W PS Entry Server**  
648256-001

#### Processor(s)

(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor

#### Cache Memory

10MB (1x10MB) Level 3

#### Network Controller

HP Ethernet 1Gb 4-port 366i Adapter

#### Storage Controller

HP Dynamic Smart Array B320i Controller

**NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.

#### Hard Drive

None ship standard; includes 7 SFF hard drive blanks

**NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.

#### Internal Storage

8 SFF HDD Bays

#### Optical Drive Bay

1; (Optional: DVD-ROM, DVD-RW)

#### PCI-Express Slots

3 standard (1-FL/FH, 1HL/FH, 1-LP)

#### Power Supply

(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)

#### Fans

4 Hot-Plug Non-redundant Fans

**NOTE:** Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)

#### Management

HP iLO Management Engine (standard)

Optional: HP Insight Control

#### Form Factor

Rack (2U)

**NOTE:** Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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.

#### Warranty

Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

### Pre-configured Models

#### Base Models - LFF

<b>HP ProLiant DL380e Gen8 E5-2407 1P 8GB-R Hot Plug 8 LFF 460W PS Base Server</b> 668665-001	<b>Processor(s)</b>	Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	<b>Cache Memory</b>	10MB (1x10MB) Level 3
	<b>Memory</b>	8GB (2 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 366i Adapter
	<b>Storage Controller</b>	HP Dynamic Smart Array B320i/512MB FBWC Controller <b>NOTE:</b> Provides support for up to 8 SATA drives, data transmission speeds up to 6Gb/s and requires purchase of SAS license key for SAS mode.
	<b>Hard Drive</b>	None ship standard; includes 7 LFF hard drive blanks <b>NOTE:</b> This model comes with 7 HDD blanks if no HDD is ordered.
	<b>Internal Storage</b>	8 LFF HDD Bays
	<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)
	<b>PCI-Express Slots</b>	3 standard (1-FL/FH, 1HL/FH, 1-LP)
	<b>Power Supply</b>	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	<b>Fans</b>	4 Hot-Plug Non-redundant Fans <b>NOTE:</b> Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping LFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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.
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

### Pre-configured Models

#### Base Models - SFF

<b>HP ProLiant DL380e Gen8 E5-2407 1P 8GB-R Hot Plug 8 SFF 460W PS Base Server</b> 668666-001	<b>Processor(s)</b>	(1) Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT) Processor
	<b>Cache Memory</b>	10MB (1x10MB) Level 3
	<b>Memory</b>	8GB (2 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 366i Adapter
	<b>Storage Controller</b>	HP Dynamic Smart Array B320i/512MB FBWC Controller <b>NOTE:</b> Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.
	<b>Hard Drive</b>	None ship standard; includes 7 SFF hard drive blanks <b>NOTE:</b> This model comes with 7 HDD blanks if no HDD is ordered.
	<b>Internal Storage</b>	8 SFF HDD Bays
	<b>Optical Drive Bay</b>	1; (Optional: DVD-ROM, DVD-RW)
	<b>PCI-Express Slots</b>	3 standard (1-FL/FH, 1HL/FH, 1-LP)
	<b>Power Supply</b>	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
	<b>Fans</b>	4 Hot-Plug Non-redundant Fans <b>NOTE:</b> Customers can upgrade to a redundant fan configuration with the purchase of an option kit (see p/n 667855-B21)
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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.
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

### Pre-configured Models

#### High Performance Models

**NOTE:** These Models are Energy Star Certified.

<b>HP ProLiant DL380e Gen8 E5-2450 2P 24GB-R P420 Hot Plug 8 SFF 750W PS Perf Svr</b> 668669-001	<b>Processor(s)</b> <b>Cache Memory</b> <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b>  <b>Hard Drive</b>  <b>Internal Storage</b> <b>Optical Drive Bay</b> <b>PCI-Express Slots</b> <b>Power Supply</b> <b>Fans</b> <b>Management</b>  <b>Energy Star</b> <b>Form Factor</b>          <b>Warranty</b>	(2) Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 5/5/6/6/7/7/8/8) Turbo+ Processors 20MB (1x20MB) Level 3 24GB (6 x 4GB) Registered DIMMs PC3L-10600R (1333MHz) HP Ethernet 1Gb 4-port 366i Adapter HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0) <b>NOTE:</b> This controller would be installed on the standard riser card or the optional secondary riser card. None ship standard; includes 7 SFF hard drive blanks <b>NOTE:</b> This model comes with 7 HDD blanks if no HDD is ordered. 8 SFF HDD Bays 1; (Optional: DVD-ROM, DVD-RW) 4 standard (1-FL/FH, 2-HL/FH, 1-LP) (2) HP 750W CS Gold Hot Plug Power Supplies (94% Efficient) 6 Hot-plug Redundant Fans HP iLO Management Engine (standard) HP Insight Control Standard Meets Energy Star requirements Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping 8SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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. Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.
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### Pre-configured Models

#### Storage Models - LFF

<b>HP ProLiant DL380e Gen8 E5-2420 1P 12GB-R P420 Hot Plug 12 LFF 750W PS Server</b> 668667-001	<b>Processor(s)</b>	(1) Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Turbo Processor
	<b>Cache Memory</b>	15MB (1x15MB) Level 3
	<b>Memory</b>	12GB (3 x 4GB) Registered DIMMs PC3L-10600R (1333MHz)
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 366i Adapter
	<b>Storage Controller</b>	HP Smart Array P420/1GB FBWC Controller (RAID 0/1/1+0/5/5+0) <b>NOTE:</b> This controller would be installed on the standard riser card or the optional secondary riser card.
	<b>Hard Drive</b>	None ship standard; includes 11 LFF hard drive blanks <b>NOTE:</b> This model comes with 11 HDD blanks if no HDD is ordered.
	<b>Internal Storage</b>	12 LFF HDD Bays
	<b>Optical Drive Bay</b>	N/A
	<b>PCI-Express Slots</b>	4 standard (1-FL/FH, 2-HL/FH, 1-LP)
	<b>Power Supply</b>	(1) HP 750W CS Gold Hot Plug Power Supply (92% Efficient)
	<b>Fans</b>	4 Hot-Plug Non-redundant Fans
	<b>Management</b>	HP iLO Management Engine (standard) Optional: HP Insight Control
	<b>Form Factor</b>	Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping LFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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.
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.



### Pre-configured Models

#### Storage Models - SFF

<b>HP ProLiant DL380e Gen8 E5-2420 1P 12GB-R P420 Hot Plug 25 SFF 750W PS Server</b> 668668-001	<b>Processor(s)</b> <b>Cache Memory</b> <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b>  <b>Hard Drive</b>  <b>Internal Storage</b> <b>Optical Drive Bay</b> <b>PCI-Express Slots</b> <b>Power Supply</b> <b>Fans</b> <b>Management</b>  <b>Form Factor</b>          <b>Warranty</b>	(1) Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Turbo Processor 15MB (1x15MB) Level 3 12GB (3 x 4GB) Registered DIMMs PC3L-10600R (1333MHz) HP Ethernet 1Gb 4-port 366i Adapter HP Smart Array P420/2GB FBWC Controller (RAID 0/1/1+0/5/5+0) <b>NOTE:</b> This controller would be installed on the standard riser card or the optional secondary riser card. None ship standard; includes 24 SFF hard drive blanks <b>NOTE:</b> This model comes with 24 HDD blanks if no HDD is ordered. 25 SFF HDD Bays N/A 4 standard (1-FL/FH, 2-HL/FH, 1-LP) (1) HP 750W CS Gold Hot Plug Power Supply (92% Efficient) 4 Hot-Plug Non-redundant Fans HP iLO Management Engine (standard) Optional: HP Insight Control Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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. Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.
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### Smart Buys

<p><b>HP ProLiant DL380e Gen8 E5-2403 1P 2GB-U Hot Plug 8 LFF 460W PS Server/S-Buy</b> 716676-S01</p>	<p><b>Processor(s)</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive Bay</b></p> <p><b>PCI-Express Slots</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Management</b></p> <p><b>Form Factor</b></p> <p><b>Warranty</b></p>	<p>(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT)</p> <p>10MB (1x10MB) Level 3</p> <p>2GB (1x2GB) Unbuffered DIMMs PC3L-10600E</p> <p>HP Ethernet 1Gb 4-port 366i Adapter</p> <p>HP Dynamic Smart Array B120i Controller</p> <p>None ship standard</p> <p>8 LFF HDD Bays</p> <p>1; (Optional: DVD-ROM, DVD-RW)</p> <p>4 standard (1-FL/FH, 2HL/FH, 1-LP)</p> <p>HP 460W CS Gold Hot Plug Power Supply</p> <p>4 Hot-Plug Non-Redundant Fans</p> <p>HP iLO Management Engine (standard)</p> <p>Rack (2U)</p> <p><b>NOTE:</b> Rail kit not included; please select part number 663480-B21: HP 2U LFF Ball Bearing Rail Kit</p> <p>Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.</p>
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<p><b>HP ProLiant DL380e Gen8 E5-2403 1P 8GB-R Hot Plug 8 SFF 2x460W PS Server/S-Buy</b> 686202-S01</p>	<p><b>Processor(s)</b></p> <p><b>Cache Memory</b></p> <p><b>Memory</b></p> <p><b>Network Controller</b></p> <p><b>Storage Controller</b></p> <p><b>Hard Drive</b></p> <p><b>Internal Storage</b></p> <p><b>Optical Drive Bay</b></p> <p><b>PCI-Express Slots</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Management</b></p> <p><b>Form Factor</b></p>	<p>(1) Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/6.4GT-s QPI/80W, DDR3-1066, HT)</p> <p>10MB (1x10MB) Level 3</p> <p>8GB (1 x 8GB) Registered DIMMs PC3-10600R (1333MHz)</p> <p>HP Ethernet 1Gb 4-port 366i Adapter</p> <p>HP Dynamic Smart Array B320i/ZM Controller</p> <p><b>NOTE:</b> Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.</p> <p>None ship standard</p> <p><b>NOTE:</b> This model comes with 7 HDD blanks if no HDD is ordered.</p> <p>8 SFF HDD Bays</p> <p>1; (Optional: DVD-ROM, DVD-RW)</p> <p>4 standard (1-FL/FH, 2HL/FH, 1-LP)</p> <p>(2) HP 460W CS Plat PL Hot Plug Power Supply (92% Efficient)</p> <p>6 Hot-Plug Redundant Fans</p> <p>HP iLO Management Engine (standard)</p> <p>Rack (2U)</p> <p><b>NOTE:</b> Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to install the server into the rack. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP</p>
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### Smart Buys

recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

#### Warranty

Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

**HP ProLiant DL380e Gen8  
E5-2420 1P 16GB-R Hot  
Plug 8 SFF 2x460W PS  
Server/S-Buy  
686203-S01**

#### Processor(s)

Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)Turbo

#### Cache Memory

15MB (1x15MB) Level 3

#### Memory

16GB (2 x 8GB) Registered DIMMs PC3-10600R (1333MHz)

#### Network Controller

HP Ethernet 1Gb 4-port 366i Adapter

#### Storage Controller

HP Dynamic Smart Array B320i/512MB FBWC Controller

**NOTE:** Provides support for up to 8 SAS/SATA drives, data transmission speeds up to 6Gb/s and includes SAS license key.

#### Hard Drive

None ship standard

**NOTE:** This model comes with 7 HDD blanks if no HDD is ordered.

#### Internal Storage

8 SFF HDD Bays

#### Optical Drive Bay

1; (Optional: DVD-ROM, DVD-RW)

#### PCI-Express Slots

4 standard (1-FL/FH, 2HL/FH, 1-LP)

#### Power Supply

(2) HP 460W CS Plat PL Hot Plug Power Supply

#### Fans

6 Hot-Plug Redundant Fans

#### Management

HP iLO Management Engine (standard)

#### Form Factor

Rack (2U)

**NOTE:** Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to install the server into the rack. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

#### Warranty

Server Warranty includes 3-Year Parts, 1-Year Labor, 1-Year Onsite support with next business day response.

### Smart Buys

<b>HP ProLiant DL380e Gen8 E5-2440 2P 32GB-R Hot Plug 25 SFF 2x750W PS Server/S-Buy</b> 686204-S01	<b>Processor(s)</b>	(2) Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)Turbo
	<b>Cache Memory</b>	15MB (1x15MB) Level 3
	<b>Memory</b>	32GB (4 x 8GB) Registered DIMMs PC3-10600R (1333MHz)
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 366i Adapter
	<b>Storage Controller</b>	HP Smart Array P420i/2GB FBWC Controller (RAID 0/1/1+0/5/5+0)
	<b>Hard Drive</b>	None ship standard <b>NOTE:</b> This model comes with 24 HDD blanks if no HDD is ordered.
	<b>Internal Storage</b>	25 SFF HDD Bays
	<b>Optical Drive Bay</b>	None
	<b>PCI-Express Slots</b>	4 standard (1-FL/FH, 2HL/FH, 1-LP)
	<b>Power Supply</b>	(2) HP 750W CS Plat Hot Plug Power Supply
	<b>Fans</b>	6 Hot-Plug Redundant Fans
	<b>Management</b>	HP iLO Management Engine (standard)
	<b>Form Factor</b>	Rack (2U) <b>NOTE:</b> Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to install the server into the rack. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	<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

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

**NOTE:** Factory Integrated Models must start with a CTO Server.

**NOTE:** FIO indicates that this option is only available as a factory installable option.

**NOTE:** All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

### Step 1: Base Configuration (choose one of the following configurable models)

**NOTE:** Rail kits and cable management solutions are optional in CTO. See "Step 3: Choose Additional Factory Integratable Options" for details on ordering.

**NOTE:** The DL380e ships standard with the Dynamic Smart Array B120i controller which provides support for up to 6 SATA drives (greater than 4 drives requires additional cable, p/n 675856-B21) and data transmission speeds up to 3Gb/s. Customers requiring SAS support or greater than 6 drives should select either a Smart Array family controller or the HP Dynamic Smart Array B320i controller (p/n 661402-B21, implemented via riser).

**NOTE:** When the SAS-enabled riser board with the Smart Array B320i controller is installed in the server, the embedded Smart Array B120i controller is automatically disabled. In the absence of another storage controller or an expander backplane, front drives operate in ACHI or Legacy mode. In these two modes, the drives are not part of a hardware RAID or a member of a logical drive. The Locate, Drive status, and Do not remove LEDs in the drive carrier are disabled.

**NOTE:** Number of HDD blanks in a given chassis is same as number of drive cage bays.

**NOTE:** Power Supply not included - choose from Options section.

#### HP Models

HP ProLiant DL380e Gen8 12 LFF Configure-to-order Server

669254-B21

**NOTE:** This CTO server is designed for customers who are looking for maximum 2U storage performance and density. This model requires two (2) Smart Array P420 controllers if using more than 8 drives.

#### Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation.  
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation  
HP Ethernet 1Gb 4-port 366i Adapter  
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)  
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection

System Fans - 4 (1 additional fan included with purchase of second processor)

Drive Cage - 12-LFF

USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot

HP iLO Management Engine (standard)

**NOTE:** New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 12 LFF Configure-to-order Server

669257-B21

**NOTE:** This CTO server includes an "expander-based" storage backplane. A single Smart Array P420 controller is capable of controlling all 12 LFF drives and optional rear drives.

### Configuration Information - Factory Integrated Models

**Factory Integrated Model ships with:**

2 x HP Smart Socket Guides for fast processor installation.  
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation  
HP Ethernet 1Gb 4-port 366i Adapter  
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)  
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

## Options subsection

System Fans - 4 (1 additional fan included with purchase of second processor)  
Drive Cage - 12-LFF  
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot  
HP iLO Management Engine (standard)

**NOTE:** New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 25 SFF Configure-to-order Server

669256-B21

**NOTE:** This CTO server includes an "expander-based" storage backplane. A single Smart Array P420 is capable of controlling all 25 SFF drives and optional rear drives.

**Factory Integrated Model ships with:**

2 x HP Smart Socket Guides for fast processor installation.  
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation  
HP Ethernet 1Gb 4-port 366i Adapter  
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)  
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

## Options subsection

System Fans - 4 (1 additional fans included with purchase of second processor)  
Drive Cage - 25-SFF (Optical media drive optional)  
USB - 4 Rear, 1 Front, 1 Internal, 1 SD slot  
HP iLO Management Engine (standard)

**NOTE:** New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see HP Rack Options below for optional required options.

HP ProLiant DL380e Gen8 8 LFF Configure-to-order Server

669255-B21

**NOTE:** This CTO server supports 4, 6, and 8LFF drive configurations based on the selection of controller. The HP Dynamic Smart Array B120i is capable of controlling up to 6 SATA drives. Greater than 4 SATA drives require the use of an option cable, p/n 675856-B21). Greater than 6 SATA drives require an HP Dynamic Smart Array B320i or

### Configuration Information - Factory Integrated Models

[P420 or greater controller.](#)

**Factory Integrated Model ships with:**

2 x HP Smart Socket Guides for fast processor installation.  
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation  
HP Ethernet 1Gb 4-port 366i Adapter  
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)  
I/O slots - 4 Slots come standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection

System Fans - 4 (one additional fan included with purchase of second processor)  
Drive Cage - 8-LFF (Optical media drive optional)  
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot  
HP iLO Management Engine (standard)

**NOTE:** New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see [HP Rack Options](#) below for optional required options.

HP ProLiant DL380e Gen8 8 SFF Configure-to-order Server

669253-B21

**NOTE:** This CTO server supports up to 8SFF drives and is expandable up to 16 SFF drives via the optional 8SFF upgrade kit (p/n 668295-B21).

**Factory Integrated Model ships with:**

2 x HP Smart Socket Guides for fast processor installation.  
12 DIMM slots for RDIMM, LRDIMM and UDIMM Memory installation  
HP Ethernet 1Gb 4-port 366i Adapter  
HP Dynamic Smart Array B120i Controller with Zero Memory (ZM)  
I/O slots - 4 Slots ship standard:

- Slot 1 - FL/FH x4 PCIe 3.0 (x8 connector)
- Slot 2 - HL/FH x8 PCIe 3.0 (x16 connector)
- Slot 3 - HL/FH x8 PCIe 3.0 (x8 connector)
- Slot 4 - Low Profile x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selections from the PCI Information and

Options subsection

System Fans - 4 (one additional fan included with purchase of second processor)  
Drive Cage - 8-SFF (Optical media drive optional)  
USB - 4 Rear, 2 Front, 1 Internal, 1 SD slot  
HP iLO Management Engine (standard)

**NOTE:** New options are available for Rack Rail Kits; these options are no longer standard on-board with this Model Part Number. Please see [HP Rack Options](#) below for optional required options.

### Configuration Information - Factory Integrated Models

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

##### HP Processors

**NOTE:** If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21

##### Entry Processors

**NOTE:** All support up to 1066MHz memory speeds.

HP DL380e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) FIO Processor Kit 661132-L21

HP DL380e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) FIO Processor Kit 661134-L21

##### Base Processors

**NOTE:** All support up to 1333MHz DDR3 memory speeds.

HP DL380e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) FIO Processor Kit 661124-L21

HP DL380e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) FIO Processor Kit 661126-L21

HP DL380e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) FIO Processor Kit 661138-L21

HP DL380e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) FIO Processor Kit 661128-L21

##### Performance Processors

**NOTE:** All support up to 1600MHz DDR3 memory speeds

HP DL380e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) FIO Processor Kit 661118-L21

HP DL380e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) FIO Processor Kit 661120-L21

HP DL380e Gen8 Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/70W) FIO Processor Kit 661136-L21

##### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_na/14225\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html)  
(Worldwide)

**NOTE:** HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.

##### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

##### Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21



### Configuration Information - Factory Integrated Models

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
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**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** PC3L is a low voltage memory.

**NOTE:** Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the "Memory" section later in this document and the Online Memory Configuration Tool for details at [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

### HP Power Supplies

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

#### HP Common Slot Platinum Plus Power Supply Kits

**NOTE:** The following Power Supplies offer up to 94% Efficiency support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

#### HP Common Slot Gold Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21

#### HP Common Slot -48VDC Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
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**NOTE:** The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

**NOTE:** Option Kits for AC power supplies include the power supply and one PDU IEC cable.

### Configuration Information - Factory Integrated Models

**NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to [www.hp.com/products/powercords](http://www.hp.com/products/powercords)

<b>HP I/O Expansion Options</b>	HP DL380e Gen8 CPU1 with SAS Support FIO Riser Kit	661402-B21
	<b>NOTE:</b> If selected with HP DL380e Gen8 8LFF CTO Chassis, HP DL380eGen8 8LFF Mini SAS FIO Kit is required. This option can only be selected for HP DL380e Gen8 8LFF CTO Chassis, HP DL380e Gen8 8SFF CTO Chassis, or HP DL380e Gen8 12LFF 1:1 CTO Chassis. <b>NOTE:</b> Includes HP Dynamic Smart Array B320i controller <b>NOTE:</b> SAS license key (PN BC393A) is selected by default when this riser kit is selected. If SAS support is not needed, SAS license key (PN BC393A) can be deselected. SAS license key is mandatory for SAS support. Supports up to 8 drives.	
	HP DL380e Gen8 CPU1 Riser Kit	661404-B21

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

<b>HP Cable Options</b>	HP DL380e Gen8 8 LFF FIO Mini SAS Kit	675160-B21
<b>HP Rack Kits</b>	<b>NOTE:</b> The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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. HP 2U Friction Gen8 Rail FIO Kit	663476-B21
<b>HP Insight Software</b>	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A

### Step 4: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Core Options and Additional Options" section below.

### Core Options

**NOTE:** Some options may not be integrated at the factory. Contact your local sales representative for additional information.

<b>HP Unique Options</b>	<p>HP DL380e Gen8 Hot Plug Fan Kit <span style="float: right;">667855-B21</span>  <b>NOTE:</b> Upgrades a non-redundant server with additional hot-plug fans.</p> <p>HP DL380e Gen8 8 Small Form Factor (SFF) Hard Drive Cage Kit <span style="float: right;">668295-B21</span>  <b>NOTE:</b> With upgrade of 8SFF Cage, there is no Optical Drive support and an additional storage controller is required for 1:1 CTO Server.</p> <p>HP DL380e Gen8 CPU1 Riser Kit <span style="float: right;">661404-B21</span></p> <p>HP DL380e Gen8 x16 PCI-E Riser Kit <span style="float: right;">661628-B21</span></p> <p>HP Graphic Card Power Adapter Kit <span style="float: right;">663282-B21</span>  <b>NOTE:</b> The adapter kit is used to provide power to high-wattage cards (example: graphics cards) that require up to 225W of power.  <b>NOTE:</b> High wattage cards are supported on the x16 FL/FH slot which is controlled by the second processor. p/n 661628-b21 is required.  <b>NOTE:</b> Because of a single x16 FL/FH slot, we support only one of the below graphic cards at a time.</p>
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### HP Processors

#### Entry Processors

**NOTE:** All support up to 1066MHz memory speeds.

HP DL380e Gen8 Intel® Xeon® E5-2407 (2.2GHz/4-core/10MB/80W) Processor Kit	661132-B21
HP DL380e Gen8 Intel® Xeon® E5-2403 (1.8GHz/4-core/10MB/80W) Processor Kit	661134-B21

#### Base Processors

**NOTE:** All support up to 1333MHz DDR3 memory speeds.

HP DL380e Gen8 Intel® Xeon® E5-2440 (2.4GHz/6-core/15MB/95W) Processor Kit	661124-B21
HP DL380e Gen8 Intel® Xeon® E5-2430 (2.2GHz/6-core/15MB/95W) Processor Kit	661126-B21
HP DL380e Gen8 Intel® Xeon® E5-2430L (2.0GHz/6-core/15MB/60W) Processor Kit	661138-B21
HP DL380e Gen8 Intel® Xeon® E5-2420 (1.9GHz/6-core/15MB/95W) Processor Kit	661128-B21

#### Performance Processors

**NOTE:** All support up to 1600MHz DDR3 memory speeds.

HP DL380e Gen8 Intel® Xeon® E5-2470 (2.3GHz/8-core/20MB/95W) Processor Kit	661118-B21
HP DL380e Gen8 Intel® Xeon® E5-2450 (2.1GHz/8-core/20MB/95W) Processor Kit	661120-B21
HP DL380e Gen8 Intel® Xeon® E5-2450L (1.8GHz/8-core/20MB/70W) Processor Kit	661136-B21

**NOTE:** Up to 2 processors supported.

**NOTE:** HT indicates that the processor model supports Intel® /Hyper-Threading Technology

**NOTE:** Turbo2: Intel® Turbo Boost Technology 2.0 provides more computing power when you need it with performance that adapts to spikes in your workload and delivers more performance upside than then previous generation turbo technology.

**NOTE:** DDR3 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® C600 Chipset E5-2400 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2400x v#, 2 = number of CPUs in a Node, 4 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v#(not yet designated) = version number.

### Core Options

#### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_na/14225\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html)

**NOTE:** HP memory from previous generation servers are not fully compatible with Smart Memory features in Gen8 Servers.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit S-Buy	647893-S21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit S-Buy	647895-S21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit S-Buy	647897-S21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit S-Buy	647899-S21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	690802-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit S-Buy	647901-S21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit S-Buy	672631-S21
<b>Unbuffered with ECC DIMMs (UDIMMs)</b>	
HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669320-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit S-Buy	647905-S21
HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669322-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21

### Core Options

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit S-Buy	647907-S21
HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit	669324-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
<b>Load Reduced DIMMs (LRDIMMs)</b>	
HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
<b>NOTE:</b> All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a> .	
<b>NOTE:</b> PC3L is a low voltage memory.	

### HP Optical Drives

HP 12.7mm Slim SATA DVD-ROM JackBlack Optical Drive	652232-B21
HP 12.7mm Slim SATA DVD-RW JackBlack Optical Drive	652235-B21

### HP Hard Drives

**NOTE:** The HP ProLiant DL380e Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

**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 with SmartDrive SFF (2.5-inch) Enterprise Drives

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	697574-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive S-Buy	652589-S21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive S-Buy	652583-S21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive S-Buy	652564-S21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive S-Buy	652611-S21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive S-Buy	652605-S21

#### SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21

### Core Options

#### SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21

#### SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives

HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/12244\\_na/12244\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html)

#### 6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive S-Buy	655710-S21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive S-Buy	655708-S21

#### 6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive S-Buy	657750-S21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive S-Buy	658071-S21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13021\\_na/13021\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html)

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

HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21
HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21

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

HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21



### Core Options

HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21
<b>6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives</b>	
HP 800GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690829-B21
HP 400GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690827-B21
HP 200GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690825-B21
<b>6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives</b>	
HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21
<b>3G SATA MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives</b>	
HP 400GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653120-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653118-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653112-B21
<b>3G SATA MLC Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives</b>	
HP 400GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653126-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653124-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653122-B21
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html">http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html</a>	
<b>Hard Drive Kits</b>	
<b>NOTE:</b> All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.	
HP LFF Gen8 Hard Drive Blank Kit	666986-B21
HP SFF Gen8 Hard Drive Blank Kit	666987-B21
HP 2U Gen8 2 LFF Rear Kit	663278-B21
<b>NOTE:</b> Supports 2 hot plug drives in the back of server and the kit includes multiple cable options which allow connections between rear, front backplanes and also between rear backplane, motherboard.	
HP 2U Gen8 2 SFF Rear Kit	663280-B21
<b>NOTE:</b> Supports 2 hot plug drives in the back of server and the kit includes multiple cable options which allow connections between rear, front backplanes and also between rear backplane, motherboard.	

### Core Options

HP DL380e Gen8 8 Small Form Factor (SFF) Hard Drive Cage Kit 668295-B21  
**NOTE:** Provides support for an additional 8 SFF drives. Requires a separate controller. HP recommends the Smart Array P420 controller with 1Gb of FBWC.

#### Hard Drive Cables

HP Gen8 2-port SATA Cable Kit 675856-B21  
**NOTE:** This cable allows the customer to upgrade their B120i-based configuration to support up to 6 LFF SATA drives.

### HP Networking

#### Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter 503746-B21

HP NC365T 4-port Ethernet Server Adapter 593722-B21

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

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

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

#### 10 Gigabit Ethernet Adapters

**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

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

HP NC523SFP 10Gb 2-port Server Adapter 593717-B21

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

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

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

HP NC552SFP 10Gb 2-port Ethernet Server Adapter 614203-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs)

### HP InfiniBand

QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA 583211-B21

HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA 592520-B21

HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544QSFP Adapter 649281-B21

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/13078\\_na/13078\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html)

### HP I/O Expansion Options

HP DL380e Gen8 CPU1 Riser Kit 661404-B21

**NOTE:** This kit provides three slots that run off of first processor.

HP DL380e Gen8 x16 PCI-E Riser Kit 661628-B21

**NOTE:** This kit provides two additional slots that run off of second processor.



### Core Options

#### HP Power Supplies

**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: [www.hp.com/go/hppoweradvisor](http://www.hp.com/go/hppoweradvisor).

#### HP Common Slot Platinum Plus Power Supply Kits

**NOTE:** The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.

HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21

#### HP Common Slot Gold Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21

#### HP Common Slot -48VDC Power Supplies

**NOTE:** The following Power Supplies offer 92% Efficiency.

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
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**NOTE:** The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

**NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

**NOTE:** HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to [www.hp.com/products/powercords](http://www.hp.com/products/powercords)

**NOTE:** Power Specification and Technical Content for supported power supplies can be found at:

[http://h18000.www1.hp.com/products/quickspecs/14209\\_na/14209\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html)

### Core Options

<b>HP Graphic Options</b>	<p>HP Graphic Card Power Adapter Kit <span style="float: right;">663282-B21</span></p> <p><b>NOTE:</b> The adapter kit is used to provide power to high-wattage cards (example: graphics cards) that require up to 225W of power.</p> <p><b>NOTE:</b> High wattage cards are supported on the x16 FL/FH slot which is controlled by the second processor. p/n 661628-b21 is required.</p> <p><b>NOTE:</b> Because of a single x16 FL/FH slot, we support only one of the below graphic cards at a time.</p>
	<p>NVIDIA Quadro 4000 2GB PCI-E Adapter <span style="float: right;">655933-B21</span></p> <p><b>NOTE:</b> Only the following OS types are supported: 64-bit Only: Red Hat Enterprise Linux 5.x, Red Hat Enterprise Linux 6.x, SUSE Linux Enterprise Server 11 SPx. 64-bit Only: Windows Server 2008 R2 SPx.</p>
	<p>NVIDIA Quadro 6000 6GB PCI-E Adapter <span style="float: right;">655935-B21</span></p> <p><b>NOTE:</b> Only the following OS types are supported: 64-bit Only: Red Hat Enterprise Linux 5.x, Red Hat Enterprise Linux 6.x, SUSE Linux Enterprise Server 11 SPx. 64-bit Only: Windows Server 2008 R2 SPx.</p>
<b>HP Cooling Options</b>	<p>HP DL380e Gen8 Hot Plug Fan Kit <span style="float: right;">667855-B21</span></p> <p><b>NOTE:</b> This kit contains a single fan and is used to upgrade non-redundant configurations to redundant configurations.</p>

### Additional Options

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

#### HP Insight Software

#### HP Insight Control

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License S-Buy	C6N27S
HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	C6N28AAE
HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License S-Buy	C6N28ASE
HP Insight Control Server Provisioning Media Kit	BD883A
HP Insight Management Media Kit	C6N31A
HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	C6N36AAE
HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21

**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 HP Software Technical Support and Update Service.

**NOTE:** Licenses ship without media. The HP 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)

#### HP Integrated Lights-Out (iLO)

#### HP Integrated Lights-Out (iLO) Advanced for ProLiant

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
HP iLO Advanced Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A

#### HP iLO Essentials

HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates E-LTU	BD774AAE
HP Integrated Lights-Out Essentials including 3yr 24x7 Tech Support and Updates Single Svr License	BD774A
HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates E-LTU	BD775AAE
HP Integrated Lights-Out Essentials including 1yr 24x7 Tech Support and Updates Single Svr License	BD775A

**NOTE:** For additional license 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)

### Additional Options

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

#### High Performance Clusters

##### HP Cluster Management Utility

HP Insight Cluster Management Utility 1yr 24x7 Flexible License QL803B

HP Insight Cluster Management Utility 3yr 24x7 Flexible License BD476A

**NOTE:** These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.

HP Insight Cluster Management Utility Media BD477A

**NOTE:** For additional license kits please see the QuickSpecs at:

[http://h18004.www1.hp.com/products/quickspecs/12612\\_na/12612\\_na.html](http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html)

##### HP HPC Linux Value Pack

HP High Performance Computing Linux Value Pack 1 Processor Flexible License for ProLiant Servers TC293B

**NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.

HP High Performance Computing Linux Value Pack Media Kit for ProLiant Servers TC294A

**NOTE:** This part number can be used to purchase media including software and documentation, which will be delivered to the customer.

**NOTE:** For additional license kits please see the QuickSpecs at:

[http://h18004.www1.hp.com/products/quickspecs/13485\\_na/13485\\_na.html](http://h18004.www1.hp.com/products/quickspecs/13485_na/13485_na.html)

#### HP I/O Accelerator Options

##### Second Generation Accelerators

HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673642-B21

HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673644-B21

HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers 673646-B21

HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers 673648-B21

##### First Generation Accelerators

HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers 600278-B21

**NOTE:** A low-profile PCI bracket is included for use in low-profile slots.

HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers 600281-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13587\\_na/13587\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13587_na/13587_na.html)

### Additional Options

#### HP Security

HP Trusted Platform Module Option

488069-B21

**NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: [www.hp.com/go/TPM](http://www.hp.com/go/TPM).

**NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment.

**NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

HP 2U Security Bezel Kit

666988-B21

#### HP Storage Controllers

##### SAS Controllers

###### Smart Array P222 Controller

HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller

631667-B21

###### Smart Array P420 Controller

HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller

631670-B21

HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller

631671-B21

###### Smart Array P421 Controller

HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller

631673-B21

HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller

631674-B21

###### Smart Array P822 Controller

HP Smart Array P822/2GB FBWC 2-ports Int/4-ports Ext SAS Controller

615418-B21

##### Optional Upgrades

HP 2GB P-series Smart Array Flash Backed Write Cache

631681-B21

HP 512MB B-series 36 inch Dynamic Smart Array Flash Backed Write Cache for ML/DL

631922-B21

**NOTE:** This kit includes a cable and cache module that is used in conjunction with the B320i controller.

HP Smart Array Advanced Pack 2.0 No Media 1 Server 1yr 24x7 Support Software

BC377A

HP Smart Array Advanced Pack 2.0 No Media Flexible Qty 1yr 24x7 Support Software

BC390A

HP Smart Array Advanced Pack 2.0 No Media Electronic Lic 1yr 24x7 Support Software

BC390AAE

HP SAS License Key No Media 1 Single Server License for B320i

BC393A

HP DL380e Gen8 Smart Array Cable Kit

672250-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/14227\\_na/14227\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14227_na/14227_na.html)

(Smart Array P222 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14228\\_na/14228\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14228_na/14228_na.html)

(Smart Array P420 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14229\\_na/14229\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14229_na/14229_na.html)

### Additional Options

(Smart Array P421 Controller)

[http://h18000.www1.hp.com/products/quickspecs/14341\\_na/14341\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14341_na/14341_na.html)

(Smart Array P822 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13200\\_na/13200\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html)

(Smart Array Advanced Pack)

[http://h18000.www1.hp.com/products/quickspecs/14343\\_na/14343\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14343_na/14343_na.html)

(Dynamic Smart Array Controllers)

#### Host Bus Adapter

HP H220 Host Bus Adapter

650933-B21

HP H221 Host Bus Adapter

650931-B21

HP H222 Host Bus Adapter

650926-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18004.www1.hp.com/products/quickspecs/14336\\_na/14336\\_na.html](http://h18004.www1.hp.com/products/quickspecs/14336_na/14336_na.html)

(HBA 220)

[http://h18004.www1.hp.com/products/quickspecs/14222\\_na/14222\\_na.html](http://h18004.www1.hp.com/products/quickspecs/14222_na/14222_na.html)

(HBA 221)

[http://h18004.www1.hp.com/products/quickspecs/14337\\_na/14337\\_na.html](http://h18004.www1.hp.com/products/quickspecs/14337_na/14337_na.html)

(HBA 222)

#### SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter

412911-B21

**NOTE:** Please see the following QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/12566\\_na/12566\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html)

(SC11Xe HBA)

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#### HP Power Cords

**NOTE:** HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).

HP C13 - Nema 6-15P US 250V 15A JP 3.6m Power Cord

AON33A

HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord

AF556A

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#### HP Cable Options

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable

QK735A

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable

QK732A

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable

QK733A

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable

QK736A

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable

QK737A

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable

QK734A

### Additional Options

#### HP 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 HP tape backup products see: <http://www.hp.com/storage/SPOCK> and [www.hp.com/go/ebs](http://www.hp.com/go/ebs).  
**NOTE:** For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.

HP StoreEver 1U USB Rack-mount Kit	A8007B
HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	COL99A
HP StoreEver LTO-6 Ultrium 6650 Internal Tape Drive	EH963A
HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

#### HP Disk Backup

**NOTE:** For the complete range of RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP disk backup products see: <http://www.hp.com/storage/SPOCK>.

#### HP StoreOnce Backup systems

HP StoreOnce 2620 iSCSI Backup	BB852A
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#### HP Storage Options

##### Storage Fibre Channel HBA

**NOTE:** For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: <http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

##### Brocade Fibre Channel HBAs

HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B

##### Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A
HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A

##### QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A

##### Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter	BK835A
HP CN1000Q Dual Port Converged Network Adapter	BS668A

### Additional Options

#### HP Uninterruptible Power Systems **HP Rack-mountable UPS**

##### **HP R1500 G3 Uninterruptible Power Supply (UPS)**

HP R1.5kVA G3 1U NA Uninterruptible Power System

AF469A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14059\\_na/14059\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14059_na/14059_na.html)

##### **HP R/T3000 G2 Uninterruptible Power System (UPS)**

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System

AF466A

HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System

AF467A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14058\\_na/14058\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14058_na/14058_na.html)

##### **R5000 Uninterruptible Power System (UPS)**

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System

AF460A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14109\\_na/14109\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14109_na/14109_na.html)

##### **R7000 Uninterruptible Power System (UPS)**

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System

AF462A

**NOTE:** Please see the QuickSpecs for additional information:

[http://h18000.www1.hp.com/products/quickspecs/14110\\_na/14110\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html)

**NOTE:** For additional information on sizing your HP UPS, please reference:

<http://www.upssizer.com>

**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

**NOTE:** For additional information on HP Uninterruptible Power Systems please go to: [www.hp.com/servers/rackups](http://www.hp.com/servers/rackups).



### Additional Options

#### HP Power Distribution Units

##### Monitored PDUs

###### HP Monitored Power Distribution Unit: Full Rack Version

HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit AF504A

HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF506A

###### HP Monitored Power Distribution Unit: Half Rack Version

HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit AF914A

**NOTE:** Please see the [QuickSpecs for Technical Specifications and additional information:](#)

[http://h18000.www1.hp.com/products/quickspecs/12118\\_na/12118\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12118_na/12118_na.html)

##### Modular PDUs 1U/0U

**NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).

HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit 252663-D72

HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit 252663-D71

**NOTE:** For additional information on HP Power Distribution Units including accessories please go to: [www.hp.com/go/pdu](http://www.hp.com/go/pdu).

**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

**NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

**NOTE:** Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords:

[http://h18000.www1.hp.com/products/quickspecs/11041\\_na/11041\\_na.html](http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.html)

#### HP Intelligent Power Distribution Units (iPDU)

##### iPDU Core Units

HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit AF520A

HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit AF522A

##### iPDU Extension Bars

HP 5xC13 Intelligent PDU Extension Bar G2 Kit AF547A

HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar AF528A

**NOTE:** Please see the [QuickSpecs for Technical Specifications and additional information:](#)

[http://h18000.www1.hp.com/products/quickspecs/13650\\_na/13650\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13650_na/13650_na.html)

#### HP Basic Power Distribution Units

HP 1.9kVA 120 Volt 12 Outlet NA/JP Basic Power Distribution Unit H5M54A

HP 2.8kVA 120 Volt 18 Outlet NA/JP Basic Power Distribution Unit H5M55A

HP 3.6kVA 200-240 Volt 12 Outlet WW Basic Power Distribution Unit H5M56A

HP 3.6kVA 200-240 Volt 20 Outlet WW Basic Power Distribution Unit H5M57A

HP 4.9kVA 208 Volt 20 Outlet NA/JP Basic Power Distribution Unit H5M58A

HP 4.9kVA 208 Volt 30 Outlet NA/JP Basic Power Distribution Unit H5M59A

### Additional Options

HP 8.3kVA 208 Volt 36 Outlet NA/JP Basic Power Distribution Unit	H5M60A
HP 8.6kVA 208 Volt Three Phase 18 Outlet NA/JP Basic Power Distribution Unit	H5M61A
HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Basic Power Distribution Unit	H5M62A
HP 5.7kVA 208 Volt Three Phase 27 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M63A
HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M64A
HP 11kVA 400 Volt Three Phase 42 Outlet NA Basic Power Distribution Unit	H5M67A
HP Hardwired 200-240 Volt 36 Outlet WW Basic Power Distribution Unit	H5M75A
HP 13.2kVA 480 Volt Three Phase 15 Outlet NA Basic Power Distribution Unit	H3X07A
HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Basic Power Distribution Unit	H3X08A
<b>HP 277 Volt options for H3X07A and H3X08A</b>	
HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html">http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html</a>	
<b>NOTE:</b> Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit <a href="http://www.hp.com/go/rackandpower">www.hp.com/go/rackandpower</a> .	

### HP Rack Series

#### HP Intelligent Series Rack

HP 636 1075mm Pallet Intelligent Series Rack	BW895A
HP 636 1075mm Shock Intelligent Series Rack	BW896A
HP 642 1075mm Pallet Intelligent Series Rack	BW903A
HP 642 1075mm Shock Intelligent Series Rack	BW904A
HP 647 1075mm Pallet Intelligent Series Rack	BW911A
HP 647 1075mm Shock Intelligent Series Rack	BW912A
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: <a href="http://h18000.www1.hp.com/products/quickspecs/14223_na/14223_na.html">http://h18000.www1.hp.com/products/quickspecs/14223_na/14223_na.html</a> (Worldwide)	
<b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .	

### HP Rack Options

#### HP Location Discovery Services

HP 36U Location Discovery Kit	BW945A
HP 42U Location Discovery Kit	BW946A
HP 47U Location Discovery Kit	BW947A
<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/14429_na/14429_na.html">http://h18000.www1.hp.com/products/quickspecs/14429_na/14429_na.html</a>	
<b>HP USB Keyboard and Mouse</b>	
HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21

### Additional Options

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13972\\_na/13972\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13972_na/13972_na.html)

#### **HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor**

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor AZ870A

HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor AZ885A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13731\\_na/13731\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html)

#### **HP Server Console Switches**

HP Server Console 0x2x8 Port Analog Switch AF616A

HP Server Console 0x2x16 Port Analog Switch AF617A

HP TAA 0x2x16xKVM Server Console G2 Switch AF626A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/11834\\_na/11834\\_na.html](http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html)

#### **HP Server Console Switch G2 with Virtual Media & CAC**

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software AF618A

HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software AF619A

HP KVM CAT5 1-pack USB Interface Adapter 336047-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13475\\_na/13475\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html)

#### **HP IP Console Switch G2 with Virtual Media & CAC**

HP 1x4 USB/PS2 KVM Console Switch AF611A

HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software AF620A

HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software AF621A

HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software AF622A

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13474\\_na/13474\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html)

#### **Rail Kits**

**NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP 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.

HP 2U LFF Ball Bearing Gen8 Rail Kit with CMA 663480-B21

**NOTE:** The 2U Ball bearing Rail Kit comes with ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

HP 2U SFF Ball Bearing Gen8 Rail Kit with CMA 663478-B21

**NOTE:** The 2U Ball bearing Rail Kit comes with ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

### Additional Options

HP Rack Cable Management Velcro Clips 379820-B21

### HP USB and SD Options

#### HP Flash Media Kits for USB Drives

HP 2GB USB Flash Media Drive Key Kit 608447-B21

**NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

#### HP Enterprise Performance Flash Media Kits for Memory Cards

HP 4GB SD Enterprise Performance Flash Media Kit 580387-B21

**NOTE:** Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: <http://www.hp.com/go/proliantvirtualization>.

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

HP 32GB SD Enterprise Mainstream Flash Media Kit 700136-B21

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/13971\\_na/13971\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13971_na/13971_na.html)

### HP Care Pack Services

#### Proactive Care

**NOTE:** Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience

HP 3 year 4 hour 24x7 ProLiant DL380e Proactive Care Service U6E33E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL380e Proactive Care Service U6E34E

HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e Proactive Care Service U6E39E

HP 3 year 6 hour Call to Repair 24x7 w/Defective Media Retention ProLiant DL380e Proactive Care Svc U6E40E

HP 3 year 4 hour 24x7 ProLiant DL380e with Insight Control Proactive Care Service U6G61E

HP 3 year 4 hour 24x7 w/Defective Media Retention DL380e with Insight Control Proactive Care Service U6G62E

HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e with Insight Control Proactive Care Service U6G63E

HP 3 yr 6hrCalltoRepair 24x7 w/Defective Media Retention DL380e w/Insight Control Proactive Care SVC U6G64E

### Additional Options

#### Collaborative Support

**NOTE:** Hardware break/fix plus 24x7 software diagnosis support with collaborative call management for a broad spectrum of 3rd Party software products including O/S and hypervisors. Recommended for customers procuring 3rd party SW O/S and hypervisors from the software vendors directly and deploying them on HP ProLiant servers.

HP 3 year 4 hour 24x7 ProLiant DL380e Collaborative Support U6E31E

HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL380e Collaborative Support U6E32E

HP 3 year 6 hour Call to Repair 24x7 ProLiant DL380e Collaborative Support U6E37E

HP 3 year 6 hour Call to Repair 24x7 w/Defective Media Retention ProLiant DL380e Collaborative Sup U6E38E

#### Proactive Care Personalized Support Option

**NOTE:** To add an onsite Account Support Manager (ASM) to Proactive Care. ASM is an assigned resource who delivers support planning and brings technical expertise and best practices advices for the customer's environment.

HP 3 year ISS ProactiveCare Personalized Support U6W98E

#### Installation Services

**NOTE:** Reduce the time required to get your system up and running and help minimize disruptions to your business.

HP Install ProLiant DL380e Service U6E81E

HP Startup ProLiant DL380e Service U6E83E

**NOTE:** For more information, customer/resellers can contact:

<http://www.hp.com/services/carepack>

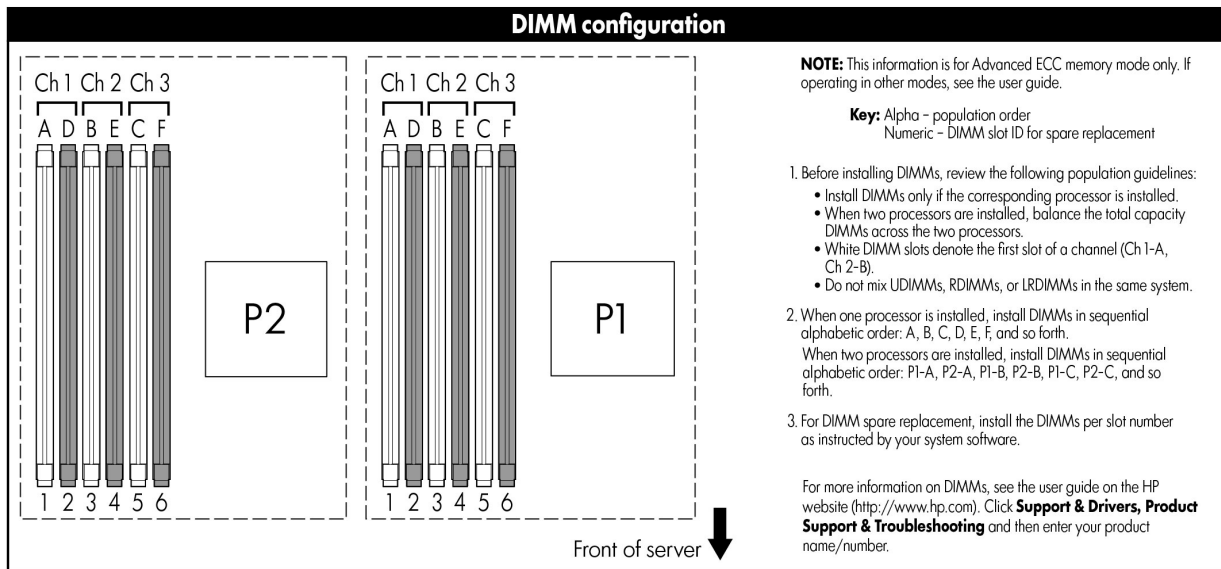
### Memory

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:  
[www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator)

#### Memory Subsystem Architecture

Each Intel® Xeon® E5-2400 family processor socket contains three memory channels that support two DIMMs each for a total of six (6) DIMM per installed processor or a grand total of twelve (12) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 384GB of memory (12 DIMM slots x 32GB per DIMM).

#### Memory population guidelines



#### General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- Do not mix RDIMMs, LRDIMMs, and UDIMMs.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the DL380e Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:  
[http://h18000.www1.hp.com/products/quickspecs/14225\\_div/14225\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html).
- For memory population rules and additional memory guidelines, please see the DL380e Gen8 user guide at  
<http://www.hp.com/support>.

### Memory

- There are three(3) Memory channels per processor; six(6) channels for 2 processors server.
- There are two(2) DIMM slots for each memory channel; twelve(12) total slots for 2 processors server.

#### Gen8 Supported Memory Bandwidth and Capacity

DIMM Type	Registered DIMMS (RDIMMs)						Load Reduced (LRDIMMs)	Unbuffered with ECC DIMMs (UDIMMs)		
	Single Rank (1R)			Dual Rank (2R)				Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)
DIMM Rank										
DIMM Capacity	4GB	4GB	8GB	8GB	16GB	16GB	32GB	2GB	4GB	8GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1333	1600	1333	1333	1333	1333
Voltage	LV	Std	Std	LV	LV	Std	LV	LV	LV	LV

#### SLOTS THAT CAN BE POPULATED

12 slot servers	12	12	12	12	12	12	12	12	12	12
-----------------	----	----	----	----	----	----	----	----	----	----

#### MAXIMUM CAPACITY (GB)<sup>1</sup>

	48	48	96	96	192	192	384	24	48	96
--	----	----	----	----	-----	-----	-----	----	----	----

#### POPULATED DIMM SPEED (MHz)

1 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333 <sup>3</sup>	1333	1333	1333
2 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333 <sup>3</sup>	1333 <sup>4</sup>	1333 <sup>4</sup>	1333 <sup>4</sup>

<sup>1</sup> Maximum capacity will vary based on individual server platform qualification schedule

<sup>3</sup> LRDIMM enables 2 DIMMs per channel. HP SmartMemory will supports up to 2DPC@1333 at 1.35V. Third party memory may only support 2DPC @1066 at 1.5V.

<sup>4</sup> For HP SmartMemory, UDIMM is supported at 2DPC@1333 at 1.35V. Third party memory may only support up to 2DPC@1066 at 1.5V.

#### Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5 2470 E5-2450, E5-2450L	1600/1333/1066MHz
E5-2440, E5-2430, E5-2420, E5-2430L	1333/1066MHz
E5-2407, E5-2403	1066MHz

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

Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
Intel Xeon E5-2450	24GB (6x 4GB)	120GB (6x 16GB, 6x 4GB)	384GB (12 x 32GB)
Intel Xeon E5-2407	8GB (2x 4GB)	168GB (10x16GB, 2x4GB)	384GB (12 x 32GB)
Intel Xeon E5-2403	4GB (1x 4GB)	180GB (11x16GB, 1x4GB)	384GB (12 x 32GB)



### Memory

#### BASIC memory slot & population diagram

Population order; looking from the front of your server CPU#1 is on right side and CPU#2 is on the left. See the population order by alphabetic and numeric progression below.

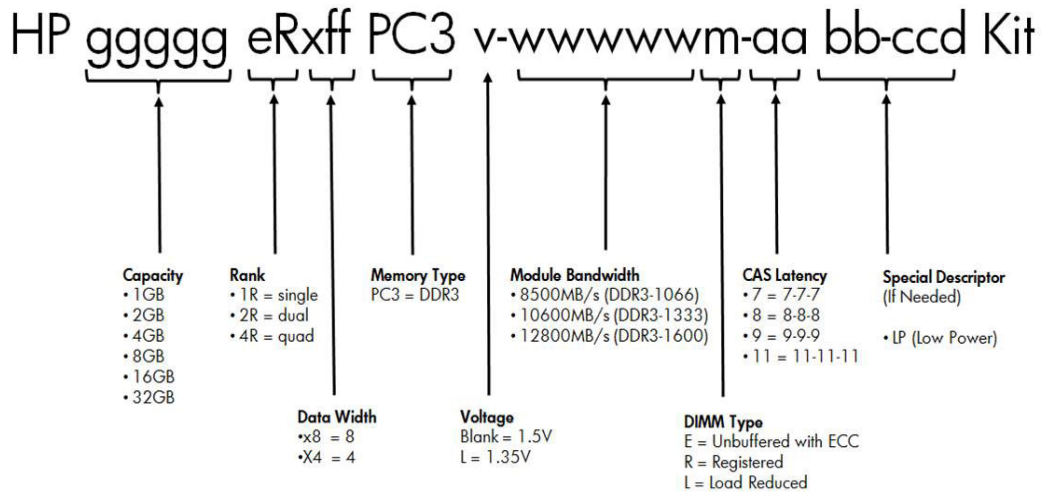
CPU #1 IS PROCESSOR ON RIGHT - LOOKING FROM FRONT OF SERVER							CPU #1
slot #	Channel 1		Channel 2		Channel 3		
population order	1	2	3	4	5	6	
In Order	A	D	B	E	C	F	
In Order	1	4	2	5	3	6	-

CPU #2 IS PROCESSOR ON LEFT - LOOKING FROM FRONT OF SERVER							CPU #2
slot #	Channel 1		Channel 2		Channel 3		
population order	1	2	3	4	5	6	
In Order	A	D	B	E	C	F	
In Order	1	4	2	5	3	6	-

**NOTE:** Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB
- 32GB = 32768MB

#### DDR3 memory options part number decoder





### Memory

Following are memory options available from HP:

#### HP Memory

**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/14225\\_na/14225\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html)  
(Worldwide)

**NOTE:** HP memory from previous generation servers are not fully compatible with the DL360e Gen8 Server.

#### Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647893-B21

HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647895-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647897-B21

HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 647899-B21

HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 690802-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit 647901-B21

HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit 672631-B21

#### Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669320-B21

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647905-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669322-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647907-B21

HP 8GB (1x8GB) Dual Rank x8 PC3-12800E (DDR3-1600) Unbuffered CAS-11 Memory Kit 669324-B21

HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit 647909-B21

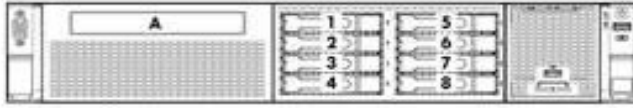
#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647903-B21

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

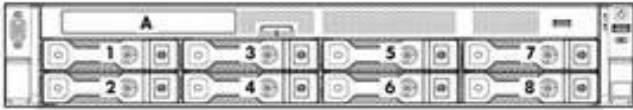
**NOTE:** PC3L is a low voltage memory.

### Storage



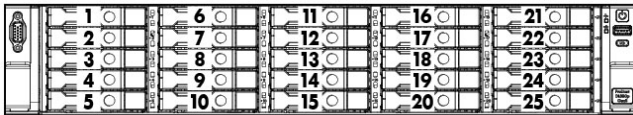
A Optical Media Bay optional

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

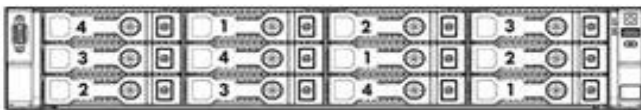


A Optical Media Bay optional

1-8 8 x LFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays



1-25 25 x SFF SATA/SAS/SDD Hot Pluggable Hard Drive Bays



1-4, 12 x LFF (1:1) SATA/SAS/SDD Hot Pluggable Hard drive

1-4, bays with point to point backplane

1-4

#### Maximum Storage Capacity - (with D2700)

Internal (25 SFF Drive Cage) 32.4TB (27 x 1.2TB SAS/SATA SFF with 25SFF drive cage + Rear 2SFF drive cage)

Internal (12 LFF Drive Cage) 56TB (14 x 4TB SAS/SATA LFF with 12LFF drive cage + Rear 2LFF drive cage)

External 240TB (200 x 1.2TB SAS SFF)

Total (25 SFF Drive) 272.4TB

Total (12 LFF Drive) 296TB

### Technical Specifications

<b>System Unit</b>	<b>Dimensions - with bezel</b> (H x W x D)	SFF Drives: 3.44 x 17.54 x 27.5 in (8.75 x 44.55 x 69.85 cm) LFF Drives: 3.44 x 17.54 x 29.5 in (8.75 x 44.55 x 74.94 cm)							
	<b>Weight</b> (approximate)	<table border="0"> <tr> <td>Maximum</td> <td>71.20 lb (32.30 kg)</td> </tr> <tr> <td colspan="2">(all hard drives: front + rear, full power supply, and processor installed)</td> </tr> <tr> <td>Minimum</td> <td>30.80 lb (14.00 kg)</td> </tr> <tr> <td colspan="2">(one SFF hard drive, single power supply, and processor installed. HDD not installed)</td> </tr> </table>	Maximum	71.20 lb (32.30 kg)	(all hard drives: front + rear, full power supply, and processor installed)		Minimum	30.80 lb (14.00 kg)	(one SFF hard drive, single power supply, and processor installed. HDD not installed)
Maximum	71.20 lb (32.30 kg)								
(all hard drives: front + rear, full power supply, and processor installed)									
Minimum	30.80 lb (14.00 kg)								
(one SFF hard drive, single power supply, and processor installed. HDD not installed)									
<b>Input Requirements</b> (per power supply)	<b>Rated Line Voltage</b>	100 to 120 VAC 200 to 240 VAC							
	<b>Rated Input Current</b>	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)							
	<b>Rated Input Frequency</b>	50 to 60 Hz							
	<b>Rated Input Power</b>	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)							
	<b>BTU Rating</b>	<table border="0"> <tr> <td>Maximum</td> <td>           For 1200 W Power Supply:            3530 BTU/hr (at 100 VAC),            4600 BTU/hr (at 200 VAC)            For 750 W Power Supply:            2925 BTU/hr (at 100 VAC),            2812 BTU/hr (at 200 VAC)            For 460 W Power Supply:            1794 BTU/hr (at 100 VAC),            1725 BTU/hr (at 200 VAC)         </td> </tr> </table>	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)					
	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)							
<b>Power Supply Output</b> (per power supply)	<table border="0"> <tr> <td>Rated Steady-State Power</td> <td>           For 1200 W Power Supply:            800 W (at 100 VAC),            900 W (at 120 VAC),            1200 W (at 200 to 240 VAC)            For 750 W Power Supply:            750 W (at 100 to 120 VAC),            750 W (at 200 to 240 VAC)         </td> </tr> </table>	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)						
Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)								

### Technical Specifications

		For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
<b>Relative Humidity (non-condensing)</b>	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
<b>Altitude</b>	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 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).
<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>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	<b>Idle</b>	<b>1P Non- Redundant</b> <b>2P Redundant</b>
		<b>SKU</b> <b>SKU</b>
	LWAd	5.8 B                      5.4 B
	LpAm	41 dBA                    38 dBA
	<b>Operating</b>	<b>1P SKU</b> <b>2P SKU</b>

### Technical Specifications

<b>Emissions Classification (EMC)</b>	LWAd	5.9 B	5.7 B
	LpAm	42 dBA	41 dBA
	FCC Rating	Class A	
<b>Normative Standards</b>	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS14336-1; CNS13438; GB4943; GB9254; 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.

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

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<b>HP Dynamic Smart Array B120i Controller</b>	<b>Dimensions</b>	Embedded
	<b>Disk Drive Interface - Transfer rate</b>	Up to 6Gb/s SATA (Serial ATA)
	<b>Connectors</b>	6 internal SATA connectors
	<b>Server Interface</b>	x4 PCIe 2.0
	<b>SATA Speed</b>	6Gb/s SATA links
	<b>Cache Memory</b>	Zero Memory RAID has no cache memory optional 40-bit 512MB ECC protected Flash Backed Write Cache (FBWC)
	<b>Logical Drives Supported</b>	Up to 8 logical volumes (6 physical drives)
	<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space
	<b>Hot Plug Support</b>	Yes
	<b>RAID Support</b>	RAID 0 (Striping), RAID 1 (Mirroring)
		RAID 1+0 (Striping & Mirroring)
RAID 5 with optional 512MB FBWC		

**NOTE:** 512 MB cache is required to enable RAID 5 support

**NOTE:** NO SAS supported.

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### Technical Specifications

<b>HP Dynamic Smart Array B320i Controller</b>	<b>Dimensions</b>	Embedded	
	<b>Disk Drive Interface - Transfer rate</b>	Up to 6Gb/s SATA (Serial ATA)	
	<b>Connectors</b>	2 internal x4 connectors	
	<b>Server Interface</b>	x4 PCIe 2.0	
	<b>Speed</b>	6Gb/s SAS links	
	<b>Cache Memory</b>	Zero Memory RAID has no cache memory optional 40-bit 512MB ECC protected Flash Backed Write Cache (FBWC)	
	<b>Logical Drives Supported</b>	Zero Memory, Up to 2 logical volumes (6 physical drives)	
	<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space	
	<b>Hot Plug Support</b>	Yes	
	<b>RAID Support</b>	RAID 0 (Striping), RAID 1 (Mirroring) RAID 1+0 (Striping & Mirroring) RAID 5 with optional 512MB FBWC <b>NOTE:</b> 512 MB cache is required to enable RAID 5 support. <b>NOTE:</b> NO SAS supported.	
	<b>HP Smart Array P420 Controller</b>	<b>Dimensions</b>	Low Profile PCIe Form Factor
		<b>Disk Drive and Enclosure Interface - transfer rate</b>	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
		<b>SAS Connectors</b>	2 internal 4X connectors
<b>Cache Memory Speed</b>		DDR2-800MHz with 40 or 72-bit wide bus	
<b>Server Interface</b>		x4 PCIe 2.0 provides 2GB/s maximum bandwidth	
<b>SAS Speed</b>		8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth	
<b>Cache Memory</b>		Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC Zero Memory, Up to 2 logical volumes (8 physical drives)	
<b>Logical Drives Supported</b>		Up to 64 logical drives with cache	
<b>Host Memory Addressing</b>		64-bit, supporting greater than 4GB server memory space	
<b>RAID Support</b>		RAID 6, 6+0 (Advanced Data Guarding) <b>NOTE:</b> RAID 6, 6+0 can be enabled with one of the following combinations: <ul style="list-style-type: none"><li>• 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades</li><li>• 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades</li><li>• 1G FBWC and Smart Array Advanced Pack License key option upgrades</li></ul> RAID 5, 5+0 (Distributed Data Guarding) <b>NOTE:</b> A minimum of 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)	

### Technical Specifications

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<b>HP Ethernet 1Gb 4-port 366i Adapter</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX	
	<b>Compatibility</b>	EEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
	<b>Data Transfer Method</b>	IEEE 802.3u 100Base-TX	
		IEEE 1588, IEEE 802.1AS	
	<b>Controller</b>	IEEE 802.3az - Energy Efficient Ethernet (EEE)	
		PCI Express v 2.0, 5.0 GT/s, two lanes (x2)	
	<b>Number of Ports</b>	I350 Powerville	
	<b>Network Transfer Rate</b>	4	
		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	
<b>Connector</b>	1000Base-TX (Half and Full-Duplex)	1000Mb/s per port, 4000 Mb/s combined	
	Two RJ-45		
<b>Cable Support</b>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)	
	10/100/1000Base-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 offers end-of-life HP 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 HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
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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 web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

### Technical Specifications

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