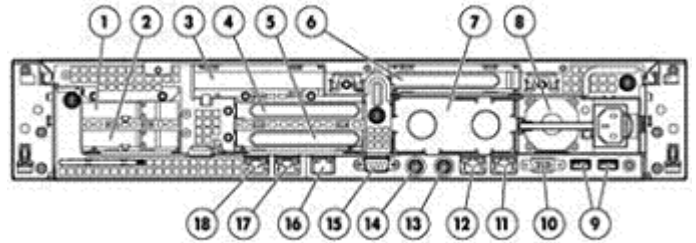
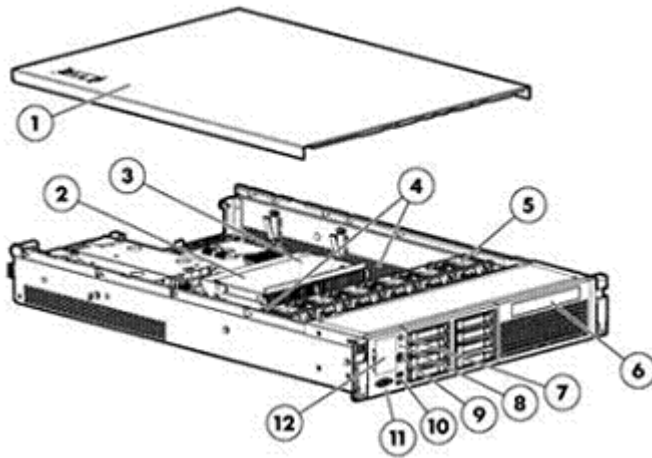


### Overview

The HP ProLiant DL380 G7 Server continues to deliver on its heritage of engineering excellence with increased flexibility and performance, enterprise-class uptime and HP Insight Control manageability, 2 socket Intel® Xeon® performance, and 2U density for a variety of applications.



#### Front View:

1. Quick removal access panel
2. First Intel Processor
3. Second Intel Processor
4. Eighteen slots: DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory
5. Hot-plug fans, full N+1 redundancy
6. Slim Optical Bay (SATA DVD-RW Optical Drive included on Performance models)
7. UID LED button
8. Health LED
9. Power On/Standby button and system power LED
10. USB connectors (2)
11. Video connector
12. Systems Insight Display

#### Rear View:

1. PCI slot 5
2. PCI slot 6
3. PCI slot 4
4. PCI slot 2
5. PCI slot 3
6. PCI slot 1
7. Power supply 2
8. Power supply 1
9. USB connectors (2)
10. Video connector
11. NIC 1 connector
12. NIC 2 connector
13. Mouse connector
14. Keyboard connector
15. Serial connector
16. iLO 3 NIC connector
17. NIC 3 connector
18. NIC 4 connector

### What's New

- Support for new HP hard drives, UPS

### 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

#### Six-Core Processors

Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W), DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processor  
Intel® Xeon® X5680 (3.33GHz/6-core/12MB/130W, DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processor  
Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processor  
Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processor  
Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processor  
Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processor  
Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processor  
Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/1/1/2/3) Processor  
Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4) Processor

#### Quad-Core Processors

Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W, DDR3-1333, HT, Turbo 1/1/2/2) Processor  
Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W, DDR3-1333, HT, Turbo 1/1/2/2) Processor  
Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor  
Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor  
Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor  
Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-1066) Processor  
Intel® Xeon® E5506 (2.13 GHz/4-core/4MB/80W, DDR3-800) Processor  
Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W, DDR3-1066) Processor  
Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT, Turbo 1/1/2/2) Processor

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

**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 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:** For the Intel 5000, and 5600Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

**NOTE:** Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.

#### Cache Memory

One of the following depending on Model

Up to 12MB (1x12MB) Level 3 cache for all 5600 series processors

Up to 8MB (1 x 8MB) Level 3 cache for all 5500 series processors

#### Chipset

Intel® 5520 Chipset

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

### Standard Features

**Upgradeability** Upgradeable to 2 processors (12 cores)

**Memory Protection** Advanced ECC (multi-bit error protection)  
Mirroring mode  
Online Spare supported on 5600 Series  
Lockstep mode

**Memory**

Type	DDR3 Registered (RDIMM) and Unbuffered (UDIMM)
Standard (Performance Models)	12GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Base Models)	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Entry Models)	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Efficiency Models)	4GB (2 x 2GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs
Maximum (RDIMM)	384GB (12 x 32GB) for Registered Memory configurations <b>NOTE:</b> Using PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 2 DIMMs per Channel in 12 slots.
Maximum (UDIMM)	48GB (12 x 2GB) for Unbuffered Memory configurations <b>NOTE:</b> Using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 12 slots.

**NOTE:** If only one processor is installed, only half the DIMM slots are available  
**NOTE:** If only one processor is installed, only half the DIMM slots are available.  
**NOTE:** when populating with the 16GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated.  
**NOTE:** For G6 and G7 servers using Xeon 5600 series processors, the default memory speed is 1333MHz with either one or two DIMMs per channel. For G6 and G7 servers using Xeon 5500 series processors, an RBSU option is available to disable 1333MHz operation (which will result in 1067MHz operation).  
**NOTE:** UDIMM support is only on 12-slot servers.  
**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**Network Controller** Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI

### Expansion Slots

**NOTE:** The system board has 2 PCI connectors, but the below riser cards have the actual PCI slots, to which PCI cards attach. Up to six available PCI-Express Gen2 slots, optional mixed PCI-X / PCI-Express or x16 PCI configurations available (see "Standard Features -Expansion Slots" section for more details).

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCIe Gen2	X8	X16	7	Full Length, Full Height Slot	

### Standard Features

2	PCIe Gen2	X4	X8	10	Half Length, Full Height Slot
3	PCIe Gen2	X4	X8	13	Half Length, Full Height Slot

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCIe Gen2	X8	X16	16	Full length, full height slot	
	5	PCIe Gen2	X4	X8	20	Half length, half height slot	
	6	PCIe Gen2	X4	X8	23	Half length, half height slot	

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

PCIe/PCI-X Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCI-X (133MHz)	64-bit	N/A	7	Full length, Full Height	
	2	PCI-E Gen2	X8	X16	11	Half Length, Full Height	
	3	PCI-E Gen2	X4	X8	15	Half Length, Full Height	

**NOTE:** PCI-X support is limited to PCI-X cards only.

\*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

PCIe/PCI-X Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCI-X (133MHz)	64-bit	Not applicable	19	Full length, Full height slot	
	5	PCI-E Gen2	X8	X16	23	Half Length, Half Height	

### Standard Features

6	PCI-E Gen2	X4	X8	27	Half Length, Half Height
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**NOTE:** Only PCI-X support is available in slot 4, supporting PCI-X cards. PCI legacy cards are not supported.

\*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

#### x16 PCIe Riser (Optional Primary)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
1	PCIe Gen2	x16	x16	13	Full Length, Full Height slot	Supports up to 150W; single wide cards only

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

#### x16 PCIe Riser (Optional Secondary)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
4	PCIe Gen2	x16	x16	16	Full Length, Full Height slot	Supports up to 150W; single wide cards only

\* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number

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

#### Storage Controller One of the following depending on Model

Entry Models	HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
Base Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
Performance Models	HP Smart Array P410i/1G FBWC Controller (RAID 0/1/1+0/5/5+0)
Available upgrades: 1G FBWC, 512MB FBWC, 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)	

### Standard Features

<b>Internal Storage Devices</b>	Diskette Drive	None Standard
	Optical Drive	None Standard on Entry, High Efficiency, and Base Models
	One of the following depending on Model	<b>NOTE:</b> No support on LFF HD Models, or when upgrading to optional 8 SFF HD.
		HP Slim SATA DVD RW Optical Drive Standard on Performance Models
		<b>NOTE:</b> The Optical Drive option is not available when you upgrade with the additional 8 SFF drive cage, or in the LFF Models
	Hard Drives	None Standard
	Hard Drive Bays	Standard (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives Optional second drive cage for additional (8) SFF drive bays (total 16) Optional cage for (6) Large Form Factor SAS/SATA hard drive bays

<b>Maximum Internal Storage</b>	Hot Plug SFF SAS	19.2TB	16 x 1.2TB (with optional SFF drive cage)
	Hot Plug LFF SATA	24.0TB	6 x 4TB (with optional LFF drive cage)
	Hot Plug SFF SAS SSD	12.8TB	16 x 800GB (with optional SFF drive cage)
	Hot Plug SFF SATA SSD	6.4TB	16 x 400GB (with optional SFF drive cage)
	Hot Plug LFF SATA SSD	6.4TB	16 x 400GB (with optional SFF drive cage)

<b>Interfaces</b>	Serial	1
	Video	2 (1 front, 1 back)
	Network RJ-45	4
	HP iLO Remote Management Port	1
	Keyboard	1
	Pointing Device (Mouse)	1
	Graphics	1
	SD slot	1
	USB 2.0 Ports	5 total: 2 front, 2 back, 1 internal

<b>Industry Standard Compliance</b>	ACPI 2.0 Compliant
	PCI 2.2 Compliant
	WOL Support
	Microsoft® Logo certifications
	USB 2.0 Support

### Standard Features

#### 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 cords that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU 6-foot C-14 to C13 power cord (142258-001). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 12-foot NEMA 5-15 to C13 power cord must be ordered separately. Also available: 110 volt 6-Foot NEMA 5-15p to C13 (AF556A).

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#### Common Slot Power Supply

Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed to provide the highest power supply efficiency without degrading the performance of a ProLiant. CS Power Supplies have efficiency ratings of up to 94% and are available in three power output options allowing the customer to "right-size" a power supply for their specific server configuration. To make sure you select the correct power supply to meet your configuration needs, we suggest that you use the HP Power Advisor to decide the "Right-Size" for your 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.

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 [80Plus.org](http://80Plus.org).

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

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#### System Fans

Fully redundant hot plug fans ship standard (N+1).

**NOTE:** One processor models include four fans. Two processor models include six fans.

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#### Required Cabling

For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl380](http://www.hp.com/servers/dl380).

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### Standard Features

#### 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](#)  
[Citrix XenServer](#)

**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>

#### Graphics

Integrated ATI ES1000, 64MB video standard

- 16 bit color: maximum resolution of 1600 x 1200
- 32 bit color: maximum resolution of 1280 x 1024

**NOTE:** Maximum resolution available via iLO 3 remote console for ProLiant is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).

#### Form Factor

Rack (2U)  
Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

#### HP Insight management

HP Service Pack for ProLiant

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 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.



### Standard Features

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.

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: <http://www.hp.com/go/spp> and <http://www.hp.com/go/hpsum>

#### HP Insight Foundation

Insight Foundation is being baselined at version v8.70 which means the following:

- Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping.
- The Media Kit will not be updated past version 8.70.
- ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit.
- PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: <http://www.hp.com/go/foundation>

Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location: [www.hp.com/go/spp](http://www.hp.com/go/spp)  
[www.hp.com/go/spp/download](http://www.hp.com/go/spp/download)

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

HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: [www.hp.com/go/iLO](http://www.hp.com/go/iLO)

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#### HP Insight Online

HP Insight Online is a new capability available through the HP Support Center portal for one stop, secure access to product and HP support information specific 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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### Standard Features

#### 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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#### Security

Power-on password  
Keyboard password  
QuickLock, Network Server Mode  
Serial interface control  
Administrator's password

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#### 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, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have 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	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. For more information, see <a href="http://www.hp.com/go/insightcontrol">http://www.hp.com/go/insightcontrol</a> .
		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> .
	HP iLO Advanced	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. iLO Advanced activates 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>
	HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.
		<b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/insightdynamics">http://www.hp.com/go/insightdynamics</a>

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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. <a href="http://www.hp.com/go/clusters">http://www.hp.com/go/clusters</a>
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### 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 Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale 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 specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. <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:

### Optional Features

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

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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. 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 packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

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#### Optimized Care

#### **Optimized Care Package: 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>

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

Provides for the deployment and basic configuration of HP Insight Control 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 Critical Advantage**

Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment <http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW>

**Additional Services:** Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

### Service and Support

#### Standard Care

**Standard Care Package: Package 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>

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

Provides for the deployment and basic configuration of HP Insight Control 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 6 hour Hardware Support Onsite Call-to-Repair Service**

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center <http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf>

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

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers <http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

**Additional Services:** Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express

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#### Basic Care

**Basic Care Package: 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>

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

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

**Additional Services:** Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express

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#### Insight Remote Support

The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.

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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.

### Performance Models

<p><b>Six-Core Models</b>  <b>HP ProLiant DL380 G7</b>  <b>X5690 2P 12GB-R</b>  <b>P410i/1GB 8 SFF 750W</b>  <b>RPS Svr</b>                      633404-001</p>	<p><b>Processor(s)</b>                      Two of the following depending on Model</p>	<p>(2) Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W), DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processors                      (2) Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processors                      (2) Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processors</p>
<p><b>HP ProLiant DL380 G7</b>  <b>X5660 2P 12GB-R</b>  <b>P410i/1GB FBWC 8 SFF</b>  <b>750W RPS Perf IC Svr</b>                      583970-001</p>	<p><b>Cache Memory</b>  <b>Memory</b></p>	<p>12MB (1 x 12MB) Level 3 cache                      12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs  <b>NOTE: Total of 18 DIMM slots.</b></p>
<p><b>HP ProLiant DL380 G7</b>  <b>X5650 2P 12GB-R</b>  <b>P410i/1GB FBWC 8 SFF</b>  <b>750W RPS Perf IC Svr</b>                      583966-001</p>	<p><b>Network Controller</b>  <b>Storage Controller</b>  <b>Hard Drive</b>  <b>Internal Storage</b>  <b>Optical Drive</b>  <b>Power Supply</b>  <b>Fans</b>  <b>Insight Control</b>  <b>Form Factor</b>  <b>Warranty</b></p>	<p>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters                      HP Smart Array P410i/1GB with FBWC                      None ship standard                      Standard: 8 SFF SAS/SATA HDD Bays                      Optional: 16 SFF SAS/SATA HDD Bays                      HP Slim SATA DVD RW drive                      (2) 750W Hot Plug Power Supplies                      (6) (N+1 redundancy standard)                      HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates                      Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)                      Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.</p>



### Pre-configured Models

#### Base Models

##### Six -Core Models

**HP ProLiant DL380 G7  
E5649 1P 6GB-R  
P410i/256 8 SFF 460W PS**

**Svr**  
633405-001

**Processor(s)**  
One of the following  
depending on Model

(1) Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processor  
(1) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT, Turbo 1/1/1/1/2/3) Processor

**Cache Memory**

12MB (1 x 12MB) Level 3 cache

**Memory**

6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs  
**NOTE: Total of 18 DIMM slots.**

**Network Controller**

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters

**Storage Controller**

HP Smart Array P410i/256MB Controller

**Hard Drive**

None ship standard

**Internal Storage**

Standard: 8 SFF SAS/SATA HDD Bays  
Optional: 16 SFF SAS/SATA HDD Bays

**Optical Drive**

None ship standard

**Power Supply**

(1) 460W Hot Plug Power Supply

**Fans**

(4) (N+1 redundancy standard)

**Form Factor**

Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

**Warranty**

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

##### Quad-Core Models

**HP ProLiant DL380 G7  
E5620 1P 6GB-R  
P410i/256 8 SFF 460W PS  
Base Server**

589152-001

**Processor(s)**

(1) Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor

**Cache Memory**

12MB (1 x 12MB) Level 3 cache

**Memory**

6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs  
**NOTE: Total of 18 DIMM slots.**

**Network Controller**

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters

**Storage Controller**

HP Smart Array P410i/256MB Controller

**Hard Drive**

None ship standard

**Internal Storage**

Standard: 8 SFF SAS/SATA HDD Bays  
Optional: 16 SFF SAS/SATA HDD Bays

**Optical Drive**

None ship standard

**Power Supply**

(1) 460W Hot Plug Power Supply

**Fans**

(4) (N+1 redundancy standard)

**Form Factor**

Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

**Warranty**

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

### Pre-configured Models

#### Entry Models

<p><b>Quad-Core Models</b>  <b>HP ProLiant DL380 G7</b>  <b>E5606 1P 4GB-R P410i/ZM</b>  <b>8 SFF 460W PS Server</b>          633408-001</p>	<p><b>Processor(s)</b> (1) Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-1066) Processor</p> <p><b>Cache Memory</b> 8MB (1 x 8MB) Level 3 cache</p> <p><b>Memory</b> 4 GB (2 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs  <b>NOTE: Total of 18 DIMM slots.</b></p> <p><b>Network Controller</b> Two HP NC382i Dual Port Multifunction Gigabit Server Adapters</p> <p><b>Storage Controller</b> HP Smart Array P410i/Zero Memory Controller</p> <p><b>Hard Drive</b> None ship standard</p> <p><b>Internal Storage</b> Standard: 8 SFF SAS/SATA HDD Bays          Optional: 16 SFF SAS/SATA HDD Bays</p> <p><b>Optical Drive</b> None ship standard</p> <p><b>Power Supply</b> (1) 460W Hot Plug Power Supply</p> <p><b>Fans</b> (4) (N+1 redundancy standard)</p> <p><b>Form Factor</b> Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)</p> <p><b>Warranty</b> Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.</p>
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#### Efficiency Model

<p><b>Quad-Core Models</b>  <b>HP ProLiant DL380 G7</b>  <b>L5630 1P 4GB-U P410i/ZM</b>  <b>4 SFF 460W PS Efficiency</b>  <b>Server</b>          583969-001</p>	<p><b>Processor(s)</b> (1) Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT, Turbo 1/1/2/2) Processor</p> <p><b>Cache Memory</b> 12MB (1 x 4MB) Level 3 cache</p> <p><b>Memory</b> 4 GB (2 x 2 GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs  <b>NOTE: Total of 18 DIMM slots.</b></p> <p><b>Network Controller</b> Two HP NC382i Dual Port Multifunction Gigabit Server Adapters</p> <p><b>Storage Controller</b> HP Smart Array P410i/Zero Memory Controller</p> <p><b>Hard Drive</b> None ship standard</p> <p><b>Internal Storage</b> Standard: 8 SFF SAS/SATA HDD Bays          Optional: 16 SFF SAS/SATA HDD Bays</p> <p><b>Optical Drive</b> None ship standard</p> <p><b>Power Supply</b> (1) 460W 94% Efficient Hot Plug Power Supply</p> <p><b>Fans</b> (4) (N+1 redundancy standard)</p> <p><b>Form Factor</b> Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)</p> <p><b>Warranty</b> Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.</p>
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### Smart Buys

<b>HP DL380G7 E5620 SFF US Svr/S-Buy</b> 605877-005	<b>Processor(s)</b>	(1) Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	<b>Memory</b>	6GB UDIMM 3 x HP 2GB 2Rx8 PC3-10600E-9
	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/512MB FBWC Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	HP Slim SATA DVD RW
	<b>Power Supply</b>	(1) 460W Hot Plug Power Supply
	<b>Fans</b>	(4) (N+1 redundancy standard)
	<b>Form Factor</b>	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

<b>HP DL380G7 X5670 LFF US Svr/S-Buy</b> 605878-005	<b>Processor(s)</b>	(2) Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)
	<b>Memory</b>	24GB (6x4GB) PC3-10600R (DDR3-1333) Registered DIMMs
	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/1GB FBWC Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Up to 6 LFF HDD
	<b>Optical Drive</b>	Not available with LFF HDD cage
	<b>Power Supply</b>	(2) 750W Hot Plug Power Supplies
	<b>Fans</b>	(6) (N+1 redundancy standard)
	<b>Form Factor</b>	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

<b>HP DL380G7 E5606 SFF US Svr/S-Buy</b> 639828-005	<b>Processor(s)</b>	(1) Intel® Xeon® Processor E5606 (2.13GHz, 8MB L3 Cache, 80W, DDR3-800)
	<b>Memory</b>	4GB RDIMM 1 x 4GB PC3-10600R-9
	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/512MB FBWC Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	HP Slim SATA DVD RW
	<b>Power Supply</b>	(1) 460W Hot Plug Power Supply
	<b>Fans</b>	(4) (N+1 redundancy standard)
	<b>Form Factor</b>	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

### Smart Buys

<b>HP DL380G7 E5649 SFF US Svr/S-buy</b> 639829-005	<b>Processor(s)</b>	(2) Intel® Xeon® Processor E5649 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	<b>Memory</b>	8GB (2x4GB) PC3-10600R (DDR3-1333) Registered DIMMs
	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/512MB FBWC Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	HP Slim SATA DVD RW
	<b>Power Supply</b>	(2) 460W Hot Plug Power Supply
	<b>Fans</b>	(6) (N+1 redundancy standard)
	<b>Form Factor</b>	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

<b>HP DL380G7 X5660 SFF US Svr/S-Buy</b> 643413-S01	<b>Processor(s)</b>	(1) Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333)
	<b>Memory</b>	4GB (1x4GB) PC3-10600R (DDR3-1333) Registered DIMMs
	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/512MB FBWC Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	HP Slim SATA DVD RW
	<b>Power Supply</b>	(2) 460W Hot Plug Power Supplies
	<b>Fans</b>	(6) (N+1 redundancy standard)
	<b>Form Factor</b>	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)
	<b>Management</b>	Insight Control

### Smart Buys

<p><b>HP DL380G7 X5675 SFF US Svr/S-Buy</b> 639830-005</p>	<p><b>Processor(s)</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</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Form Factor</b></p> <p><b>Management</b></p>	<p>(2) Intel® Xeon® Processor X5675 (3.06GHz, 12MB L3 Cache, 95W, DDR3-1333)</p> <p>8GB (2x4GB) PC3-10600R (DDR3-1333) Registered DIMMs</p> <p>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters</p> <p>HP Smart Array P410i/1GB FBWC Controller</p> <p>None ship standard</p> <p>Standard: 8 SFF SAS/SATA HDD Bays</p> <p>HP Slim SATA DVD RW</p> <p>(2) 750W Hot Plug Power Supplies</p> <p>(6) (N+1 redundancy standard)</p> <p>Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)</p> <p>Insight Control</p>
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<p><b>HP DL380G7 X5660 SFF 24GB Svr/S-Buy</b> 656765-S01</p>	<p><b>Processor(s)</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</b></p> <p><b>Power Supply</b></p> <p><b>Fans</b></p> <p><b>Form Factor</b></p> <p><b>Management</b></p>	<p>(2) Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333)</p> <p>24GB (6x4GB) PC3-10600R (DDR3-1333) Registered DIMMs</p> <p>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters</p> <p>HP Smart Array P410i/1GB FBWC Controller</p> <p>None ship standard</p> <p>Standard: 8 SFF SAS/SATA HDD Bays</p> <p>None included</p> <p>(2) 750W Hot Plug Power Supplies</p> <p>(6) (N+1 redundancy standard)</p> <p>Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)</p> <p>Insight Control</p>
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### 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:** Configure-to-order (CTO) servers must start with a CTO Chassis.

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

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

<b>HP Models</b>	HP ProLiant DL380 G7 Small Form Factor (SFF) Configure-to-order Server	583914-B21
	<b>Factory Integrated Model ships with:</b> Two HP NC382i Dual Port Multifunction Gigabit Server Adapters Smart Array P410i Controller I/O slots - 3 Slots come standard: <ul style="list-style-type: none"><li>● Slot 1 - FL/FH x8 PCIE (x16 connector)</li><li>● Slot 2 - HL/FH x4 PCIE (x8 connector)</li><li>● Slot 3 - HL/FH x4 PCIE (x8 connector)<ul style="list-style-type: none"><li>○ Additional Slots may be added via selections from the PCI Information and Options subsection</li></ul></li></ul> System Fans - 4 (2 additional fans included with second processor) Drive Cage - 8-SFF (Second SFF drive cage optional) USB - 2 Rear, 2 Front, 1 Internal, 1 SD slot Server Management - (iLO 3) (embedded) <b>NOTE:</b> Power Supply not included - choose from Options section	
	HP ProLiant DL380 G7 Large Form Factor (LFF) Configure-to-order Server	583917-B21
	<b>Factory Integrated Model ships with:</b> Two HP NC382i Dual Port Multifunction Gigabit Server Adapters Smart Array P410i Controller I/O slots - 3 Slots come standard: <ul style="list-style-type: none"><li>● Slot 1 - FL/FH x8 PCIE (x16 connector)</li><li>● Slot 2 - HL/FH x4 PCIE (x8 connector)</li><li>● Slot 3 - HL/FH x4 PCIE (x8 connector)<ul style="list-style-type: none"><li>○ Additional Slots may be added via selections from the PCI Information and Options subsection</li></ul></li></ul> Drive Cage - 6-LFF System Fans - 4 (2 additional fans included with second processor) USB - 2 Rear, 2 Front, 1 Internal, 1 SD slot Server Management - (iLO 3) (embedded) <b>NOTE:</b> Power Supply not included - choose from Options section <b>NOTE:</b> On LFF Model Optional Optical Drive is not available	

### 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 unless Performance Model features are desired. Then choose one xxxxxx-L21 and the

### Configuration Information - Factory Integrated Models

corresponding HP Performance Pack from Step 3 below.

#### Six-Core Processors

HP DL380 G7 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) FIO Processor Kit	633410-L21
HP DL380 G7 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit	633414-L21
HP DL380 G7 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit	633418-L21
HP DL380 G7 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit	633420-L21

#### Quad-Core Processors

HP DL380 G7 Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W) FIO Processor Kit	633412-L21
HP DL380 G7 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) FIO Processor Kit	633416-L21
HP DL380 G7 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) FIO Processor Kit	587478-L21
HP DL380 G7 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) FIO Processor Kit	633442-L21
HP DL380 G7 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) FIO Processor Kit	633444-L21

### HP Memory

#### Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21

HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627814-B21
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#### Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-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:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient)

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

### HP Power Supplies

**NOTE:** Prior to making a power supply selection it is highly recommended that the HP

### Configuration Information - Factory Integrated Models

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 Power Supplies

HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21

#### HP Common Slot Gold Power Supplies

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

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
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**NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.

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

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

#### HP Performance Packs

The HP ProLiant DL380 performance packs are necessary to configure a HP ProLiant DL380 Performance Model. HP ProLiant DL380 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value.

- The performance pack includes:
  - 2nd processor
  - 750-watt redundant power supply
  - 1GB FBWC cache module for P410i
  - One DL380 G6 HP Fan kit (contains qty of 2)
  - Insight Control license with 1 yr 24x7 support

**NOTE:** Must also select Slimline SATA DVD RW Optical Drive (481043-B21) to achieve parity to DL380 High Performance Models.

HP DL380 G7 X5650 High Performance Model FIO Performance Pack	593824-B21
HP DL380 G7 X5660 High Performance Model FIO Performance Pack	593825-B21
HP DL380 G7 X5690 FIO High Performance Pack	633445-B21

#### HP Insight Software

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
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### 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>	HP DL380 G6 8 Small Form Factor (SFF) Drive Cage Kit	516914-B21
	<p><b>NOTE:</b> Second drive cage installation replaces internal optical bay.</p> <p><b>NOTE:</b> Second drive cage requires second controller or HP SAS Expander Card (468406-B21).</p>	
	HP DL380 G6 3 Slot PCI-E Riser Kit	500579-B21

### HP Processors

#### Six-Core Processors

HP DL380 G7 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) Processor Kit	633410-B21
HP DL380 G7 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) Processor Kit	633414-B21
HP DL380 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor Kit	587493-B21
HP DL380 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit	587491-B21
HP DL380 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit	587482-B21
HP DL380 G7 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) Processor Kit	633418-B21
HP DL380 G7 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) Processor Kit	633420-B21
HP DL380 G7 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) Processor Kit	587507-B21

#### Quad-Core Processors

HP DL380 G7 Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W) Processor Kit	633412-B21
HP DL380 G7 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) Processor Kit	633416-B21
HP DL380 G7 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) Processor Kit	587480-B21
HP DL380 G7 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) Processor Kit	587478-B21
HP DL380 G7 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit	587476-B21
HP DL380 G7 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) Processor Kit	633442-B21
HP DL380 G7 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) Processor Kit	633444-B21
HP DL380 G7 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit	587505-B21

### HP Memory

#### Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
HP 5-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-S21
HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
HP 5-Buy 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-S21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
HP 5-Buy 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-S21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
<p><b>NOTE:</b> Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.</p>	
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21

### Core Options

HP S-Buy 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-S21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
<b>NOTE:</b> Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
HP S-Buy 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-S21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627814-B21
<b>Unbuffered with ECC DIMMs (UDIMMs)</b>	
HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
HP S-Buy 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-S21
HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-S21
HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
HP S-Buy 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-S21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit	619488-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> Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a>	
<b>NOTE:</b> PC3L is a low voltage memory.	

### HP Optical Drives

HP Slim 12.7mm SATA DVD-RW Optical Drive	481043-B21
<b>NOTE:</b> Included in performance models.	
HP Slim 12.7mm SATA DVD-ROM Optical Drive	481041-B21
<b>NOTE:</b> There is no optical drive support in the LFF Hard Drive models, or optional 8 SFF HDD	

### HP Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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

### Core Options

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

HP 1.2TB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	693648-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive S-Buy	619291-S21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP S-Buy 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-S21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive	627117-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive S-Buy	627117-S21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP S-Buy 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-S21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP S-Buy 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-S21
HP S-Buy 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-S21

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

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21

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

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive S-Buy	605835-S21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21

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

HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	625031-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-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)

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

HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive S-Buy	625609-S21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
HP S-Buy 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-S21

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

HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	694374-B21
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### Core Options

HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP S-Buy 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-S21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive S-Buy	458928-S21
<b>SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives</b>	
HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-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 Enterprise Mainstream 3yr Warranty Solid State Drive	690823-B21
HP 400GB 6G SAS Mainstream Endurance SFF 2.5-in ENT Mainstream 3yr Warranty Solid State Drive	690821-B21
HP 200GB 6G SAS Mainstream Endurance SFF 2.5-in Enterprise Mainstream 3yr Warranty Solid State Drive	690819-B21
<b>SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives</b>	
HP 400GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636597-B21
HP 200GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636595-B21
HP 100GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636593-B21
<b>SATA Hot Plug 3.5" Midline (MDL) Solid State Drives</b>	
HP 400GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636611-B21
HP 200GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636609-B21
HP 100GB 3G SATA MLC LFF (3.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636607-B21
<b>6G SAS Hot Plug Enterprise Performance Solid State Drives</b>	
HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632494-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632492-B21

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

[http://h18000.www1.hp.com/products/quickspecs/14038\\_na/14038\\_na.html](http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html)

### Core Options

#### HP Networking

##### Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter	503746-B21
HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
HP NC365T 4-port Ethernet Server Adapter	593722-B21
HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-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 NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
HP 10 GbE PCI-e G2 Dual Port Network Interface Card	516937-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

HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA	592521-B21
QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
HP InfiniBand FDR/EN 10/40Gb Dual 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 DL380 G6 3 Slot PCI-E Riser Kit	500579-B21
<b>NOTE:</b> Supports the HP ProLiant DL380 G7 server.	
HP DL385G5p PCI-X Riser Kit	494322-B21
HP DL38X G5p/G6/G7 PCI-E x16 Riser Kit	494323-B21
HP DL38X (2) x8 PCI-E Riser Kit	494326-B21

### Core Options

#### HP Power Supplies

**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 Power Supplies

HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Platinum Hot Plug Power Supply Kit	593831-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21

#### HP Common Slot Gold Power Supplies

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

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21
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**NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.

### Additional Options

#### 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 Electronic License C6N28AAE

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) 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

**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)

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

### Additional Options

#### 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 Drive Cage Options

HP DL380 G6 8 Small Form Factor (SFF) Drive Cage Kit 516914-B21

**NOTE:** Supports the HP ProLiant DL380 G7 server.

**NOTE:** Second drive cage installation replaces internal optical bay.

**NOTE:** Second drive cage requires second controller or HP SAS Expander Card (468406-B21).



### Additional Options

#### 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
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)

#### HP Security

HP Trusted Platform Module Option	488069-B21
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**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 Storage Controllers

##### SAS Controllers

###### Smart Array P212 Controller

HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21

###### Smart Array P410 Controller

HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21

###### Smart Array P411 Controller

HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21

###### Smart Array P812 Controller

### Additional Options

HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller 487204-B21

#### Optional Upgrades

HP 256MB P-series Cache Upgrade 462968-B21

**NOTE:** Supported on HP Smart Array P212 Controller and as an upgrade on HP Smart Array P410i (Zero Memory).

HP 512MB P-Series Battery Backed Write Cache Upgrade 462967-B21

HP 1GB Flash Backed Cache 534562-B21

**NOTE:** Supported on the Smart Array P410i Controller only.

HP 512MB Flash Backed Write Cache 534916-B21

**NOTE:** Supported on the Smart Array P410i Controller only.

HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License 516471-B21

**NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

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

[http://h18000.www1.hp.com/products/quickspecs/13203\\_na/13203\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13203_na/13203_na.html)  
(Smart Array P212 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13201\\_na/13201\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13201_na/13201_na.html)  
(Smart Array P410 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13202\\_na/13202\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13202_na/13202_na.html)  
(Smart Array P411 Controller)

[http://h18000.www1.hp.com/products/quickspecs/13558\\_na/13558\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13558_na/13558_na.html)  
(Smart Array P812 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)

#### SAS Controller Options

HP 24 Bay SAS Expander Card 468406-B21

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

[http://h18004.www1.hp.com/products/quickspecs/13232\\_na/13232\\_na.html](http://h18004.www1.hp.com/products/quickspecs/13232_na/13232_na.html)  
(SAS Expander Card)

#### SAS HBA

HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter 614988-B21

**NOTE:** This is a 2 x4 External Port HBA

**NOTE:** This is only approved for the HP P2000 G3 SAS Modular Smart Array.

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

[http://h18004.www1.hp.com/products/quickspecs/13651\\_na/13651\\_na.html](http://h18004.www1.hp.com/products/quickspecs/13651_na/13651_na.html)  
(SC08e 6Gb HBA)

#### SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter 412911-B21

### Additional Options

**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)

#### 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 - SEV 1011 CH 250V 10Amp 1.83m Power Cord AF556A

#### 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 LTO-3 Ultrium 920 SAS Internal Tape Drive EH847B

**NOTE:** For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StoreEver LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit EH946C

**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StoreEver LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rack-mount EJ014B

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 D2D Backup Systems see: <http://www.hp.com/go/d2d>. 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 D2D Backup Systems with Backup Data Deduplication

HP StoreOnce D2D2502i Backup System EJ001C

HP StoreOnce D2D2504i Backup System EJ002C

HP StoreOnce D2D4112 Backup System EH993C

##### HP RDX Removable Disk Backup Systems USB

HP RDX1000 USB3.0 DL Server Backup Module B7B68A

HP RDX500 USB3.0 DL Server Backup Module B7B65A

##### HP StoreOnce Backup systems

HP StoreOnce 2620 iSCSI Backup BB852A

HP StoreOnce 4220 Backup BB855A

### Additional Options

#### 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
HP 41B 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP767B
HP 42B 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP768B

#### 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 FC2142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	A8002B
HP FC2242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	A8003B
HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A
HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A

#### 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
HP FC1142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AE311A
HP FC1242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AE312A

#### Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter	BK835A
HP CN1000Q Dual Port Converged Network Adapter	BS668A
HP CN1000E Dual Port Converged Network Adapter	AW520B

#### HP Disk Storage Systems Disk Enclosures

HP D2600 Disk Enclosure	AJ940A
HP D2700 Disk Enclosure	AJ941A

**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/13404\\_na/13404\\_na.html](http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html)

### 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

HP R5KVA and R7KVA 3U Extended Runtime Module AF464A

**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)

##### **HP Rackmountable 3 Phase Uninterruptible Power Systems (UPS R8000/3 and R12000/3)**

HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System AF431A

HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System AF429A

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

[http://h18000.www1.hp.com/products/quickspecs/12857\\_na/12857\\_na.html](http://h18000.www1.hp.com/products/quickspecs/12857_na/12857_na.html)

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

**NOTE:** For additional information on sizing your server, 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).

### Additional Options

#### HP Power Distribution Units

##### 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 following QuickSpecs for 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 Power Distribution Units 1U/0U (Up to 32 outlets)

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

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

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

HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit 252663-D73

**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)

**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).

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

##### iPDU Core Units

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

HP 8.3kVA 40A Single Phase Core Intelligent Modular Power Distribution Unit AF521A

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

HP 17.3kVA 48A Three Phase Core Intelligent Modular Power Distribution Unit AF523A

HP 11.4kVA 16A 415V Three Phase L22-20 Core Intelligent Power Distribution Unit AF900A

HP 17.3kVA 24A 415V Three Phase L22-30 Core Intelligent Power Distribution Unit AF902A

HP 17.3kVA 24A 415V Three Phase IEC309 Core Intelligent Power Distribution Unit AF901A

HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit AF535A

HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit AF537A

##### iPDU Extension Bars

HP 5x13 Intelligent PDU Extension Bar G2 Kit AF547A

HP 5x13 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)

### Additional Options

#### HP Rack Options

#### HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)

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 USB BFR with PVC Free Keyboard/Mouse Kit 631341-B21

**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 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)



### Additional Options

<b>HP USB and SD options</b>	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB SD Enterprise Performance Flash Media Kit	580387-B21
	<b>NOTE:</b> 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: <a href="http://www.hp.com/go/proliantvirtualization">http://www.hp.com/go/proliantvirtualization</a> .	
	HP 2GB USB Flash Media Drive Key Kit	608447-B21
	<b>NOTE:</b> 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 <a href="#">HP VMware Getting Started Guide</a> for installation instructions.	

### 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 DL38x(p) Proactive Care Service	U2Z50E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL38x(p) Proactive Care Service	U2Z53E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) Proactive Care Service	U2Z56E
HP 3 year 6 hour Call To Repair 24x7 w/Defective Media Retention ProLiant DL38x(p) Proactive Care SVC	U2Z59E
HP 3 year 4 hour 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N23E
HP 3 year 4hr 24x7 with Defective Media Retention DL38x(p) with Insight Control Proactive Care SVC	U3N26E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N29E
HP 3yr 6hrCallToRepair 24x7w/Defective Media Retention DL38x(p) w/Insight Control Proactive Care SVC	U3N32E

#### 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 DL38x(p) Collaborative Support	U1J30E
HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL38x(p) Collaborative Support	U1J33E
HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) Collaborative Support	U1J36E
HP 3 year 6hr Call To Repair 24x7 with Defective Media Retention ProLiant DL38x(p) Collaborative Supp	U1J39E



### Additional Options

#### 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 3yr Provides annual personalized proactive supp for existing Proactive Care ISS centric environment U6W98E

#### Installation Services

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

HP Installation of ProLiant Add On/In Options Service UH745E

HP Install ProLiant DL38x(p) Service U4554E

HP Startup ProLiant DL38x(p) Service U4555E

HP Installation and Startup for Insight Control Server Deployment - previously Rapid Deployment Pack U5683E

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

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

#### Smart Buy Care Pack Services

S-Buy 4-Hour Onsite Response, 13-Hour x 5-Day Coverage, 3 years UE893E

S-Buy 4-Hour Onsite Response, 24-Hour x 7-Day Coverage, 3 years UE894E

S-Buy 6-Hour Call to Repair, 24-Hour x 7-Day Coverage, 3 years UM363E

HP SBuy3y24x7 24hCTRProLiant DL38xHW Sup HZ761E

**NOTE:** Smart Buy Care Packs can only be attached to Smart Buy SKUs

### Memory

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

#### DDR3 memory population guidelines

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)

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
  - There are three (3) channels per processor; six (6) channels per server
  - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
  - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
  - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- If any Quad rank DIMMs are installed, all channels are limited to only 2 DIMMs per channel.
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- 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 chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3,6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

DIMM slot/capacity/populated speed table												
DIMM Type	Registered DIMMS (RDIMMs)									Unbuffered with ECC DIMMs (UDIMMs)		
DIMM Rank	Single Rank (1R)	Dual Rank (2R)					Quad Rank (4R)			Single Rank (1R)	Dual Rank (2R)	
DIMM Capacity	4GB	2GB	4GB	8GB	8GB	16GB	4GB	16GB	32GB	1GB	2GB	4GB
DIMM Native Speed (MHz)	1333	1333	1333	1066	1333	1333	1066	1066	1066	1333	1333	1333
Voltage	LV/Std	Std	Std	Std	LV/Std	LV	Std	Std	LV/Std	Std	Std	Std
<b>SLOTS THAT CAN BE POPULATED</b>												
18 slot servers	18	18	18	18	18	18	12	12	12	12	12	12
<b>MAXIMUM CAPACITY (GB)</b>												
	72	36	72	144	144	288	48	192	384	12	24	48
<b>POPULATED DIMM SPEED (MHz)</b>												

### Memory

1 DIMM Per Channel	1333	1333	1333	1066	1333	1333	1066	1066	1066	1333	1333	1333
2 DIMM Per Channel	1066/ 1333*	1333	1333	1066	1066/ 1333*	1066/ 1333*	800	800	800	1333	1333	1333
3 DIMM Per Channel	800**	800**	800	800	800**	800**	n/a	n/a	n/a	n/a	n/a	n/a

\* 2DPC: LV runs default 1333 at 1.5V. Use RBSU Power Management option to select 1066 at 1.35V. Std runs at 1333.

\*\* 3DPC: LV/Std voltage runs at 800

#### NOTES:

- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, you still run at 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, you run at 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

### DIMM slot and configuration diagrams

#### Basic memory slot & population diagram

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

18 DIMM SLOTS (9 per CPU node)					
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G	1	G	Chnl 1
	2	D	2	D	
	3	A	3	A	
Chnl 2	4	H	4	H	Chnl 2
	5	E	5	E	
	6	B	6	B	
Chnl 3	7	I	7	I	Chnl 3
	8	F	8	F	
	9	C	9	C	

#### Standard memory configuration (1 CPU model)

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600 RDIMMs

### Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; empty	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; empty	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; empty	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

#### Standard memory plus optional memory (1 CPU model)

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs
  - 3x 2GB dual-rank PC3-10600 RDIMMs
  - 6x 8GB dual-rank PC3-8500 RDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; 8GB DIMM	1	G; empty	Chnl 1
	2	D; 8GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; 8GB DIMM	4	H; empty	Chnl 2
	5	E; 8GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; 8GB DIMM	7	I; empty	Chnl 3
	8	F; 8GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

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

##### RDIMM maximum configuration (1 CPU model)

- 96GB, consisting of six (6) 16GB quad-rank PC3-8500 RDIMMs

### Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB DIMM	2	D; empty	
	3	A; 16GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB DIMM	5	E; empty	
	6	B; 16GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB DIMM	8	F; empty	
	9	C; 16GB DIMM	9	C; empty	

#### UDIMM maximum configuration (1 CPU model)

- 12GB, consisting of six (6) 2GB dual-rank PC3-10600 UDIMMs

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 2GB DIMM	2	D; empty	
	3	A; 2GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 2GB DIMM	5	E; empty	
	6	B; 2GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 2GB DIMM	8	F; empty	
	9	C; 2GB DIMM	9	C; empty	

#### Standard memory replaced with optional memory (2 CPU model)

#### RDIMM maximum configuration (2 CPU model)

- 384GB, consisting of twelve (12) 32GB quad-rank PC3L-8500 RDIMMs

### Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 32GB DIMM	2	D; 32GB DIMM	
	3	A; 32GB DIMM	3	A; 32GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 32GB DIMM	5	E; 32GB DIMM	
	6	B; 32GB DIMM	6	B; 32GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 32GB DIMM	8	F; 32GB DIMM	
	9	C; 32GB DIMM	9	C; 32GB DIMM	

### UDIMM maximum configuration

- 48GB, consisting of twelve (12) 4GB dual-rank PC3-10600 UDIMMs

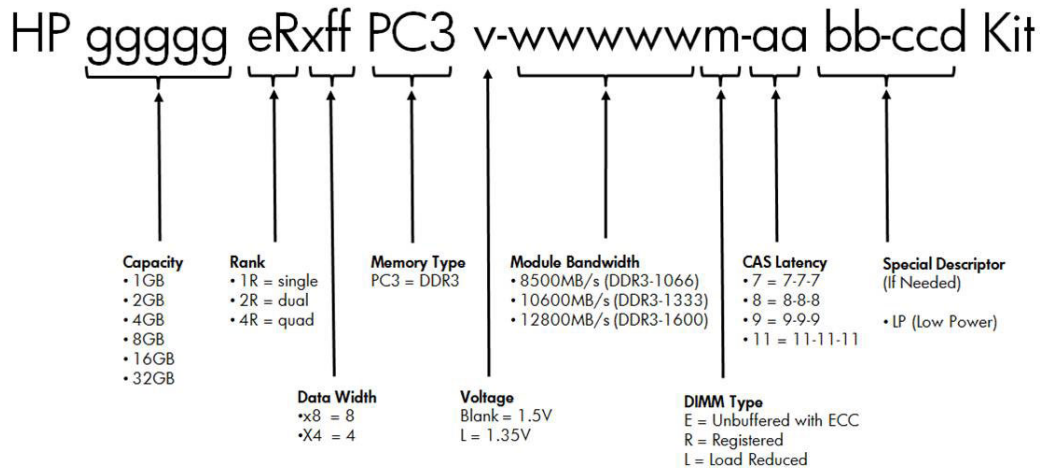
	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 4GB DIMM	2	D; 4GB DIMM	
	3	A; 4GB DIMM	3	A; 4GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB DIMM	5	E; 4GB DIMM	
	6	B; 4GB DIMM	6	B; 4GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB DIMM	8	F; 4GB DIMM	
	9	C; 4GB DIMM	9	C; 4GB DIMM	

**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

##### Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500656-B21

HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500658-B21

HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 593339-B21

HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit 604504-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500662-B21

HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit 604506-B21

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit 500666-B21

HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit 627812-B21

HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit 627814-B21

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

HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500668-B21

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500670-B21

HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500672-B21

HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit 619488-B21

##### HP Smart Buy Memory

##### Registered DIMMs (RDIMMs)

HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500656-S21

HP S-Buy 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500658-S21

### Memory

HP S-Buy 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit 500662-S21

HP S-Buy 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit 500666-S21

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

HP S-Buy 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500668-S21

HP S-Buy 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit 500670-S21

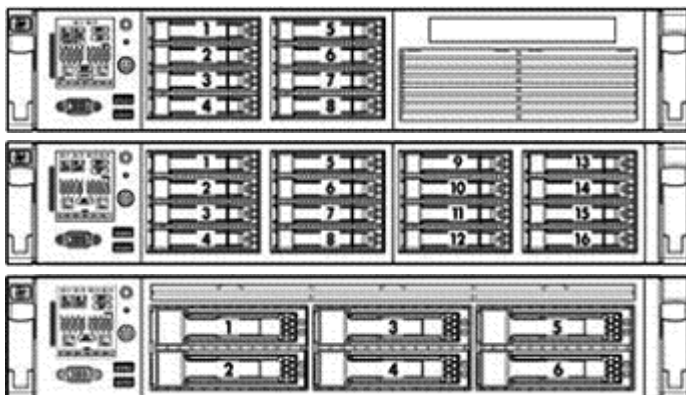
**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: [www.hp.com/go/proliant-energy-efficient](http://www.hp.com/go/proliant-energy-efficient)

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



### Storage



- 1-8 Eight SFF SAS hot plug hard drive bays
- 1-16 Sixteen SFF SAS hot plug hard drive bays  
**NOTE:** This configuration does not support optical drive.
- 1-6 Six LFF SAS hot plug hard drive bays  
**NOTE:** This configuration does not support optical drive.

### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
HP Slim SATA DVD RW Optical Drive <b>NOTE:</b> Included in performance models.	Only 1 available removable media bay	Slimline bay	Integrated SATA <b>NOTE:</b> Optional
HP Slim SATA DVD-ROM Optical Drive	Only 1 available removable media bay	Slimline bay	Integrated SATA <b>NOTE:</b> Optional

#### Hard Drives

**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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

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

	Quantity Supported	Position Supported	Controller
1.2TB 6G SAS 10K	Up to 8	1-8	HP Smart Array P410/256 MB Controller
900GB 6G SAS 10K			HP Smart Array P410/512 MB with BBWC Controller
600GB 6G SAS 10K			HP Smart Array P410/512MB with FBWC
450GB 6G SAS 10K			HP Smart Array P410/1G with FBWC
300GB 6G SAS 10K			HP Smart Array P411/256MB Controller
300GB 6G SAS 15K			HP Smart Array P411/512MB with BBWC Controller
146GB 6G SAS 15K			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
	HP Smart Array P812/1G Flash Backed Cache Controller		

**NOTE:** Second SFF drive cage requires second controller or HP SAS Expander Card (PN 468406-B21).

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

### Storage

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
450GB 6G SAS 15K			HP Smart Array P410/512 MB with BBWC Controller
300GB 6G SAS 15K			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K	Up to 8	1-8	HP Smart Array P410/256 MB Controller
500GB 6G SAS 7.2K			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
3TB 6G SAS 7.2K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
2TB 6G SAS 7.2K			HP Smart Array P410/512 MB with BBWC Controller
1TB 6G SAS 7.2K			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K 500GB	Up to 8	1-8	HP Smart Array P410/256 MB Controller
3G SATA 7.2K			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

### Storage

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

	Quantity Supported	Position Supported	Controller
4TB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
3TB 3G SATA 7.2K			HP Smart Array P410/512 MB with BBWC Controller
2TB 3G SATA 7.2K			HP Smart Array P410/512MB with FBWC
1TB 3G SATA 7.2K			HP Smart Array P410/1G with FBWC
500GB 3G SATA 7.2K			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

#### SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

#### SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA	Up to 8	1-8	HP Smart Array P410/256 MB Controller
200GB 3.0G SATA			HP Smart Array P410/512 MB with BBWC Controller
100GB 3.0G SATA			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

#### SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA	Up to 6	1-6	HP Smart Array P410/256 MB Controller
200GB 3.0G SATA			HP Smart Array P410/512 MB with BBWC Controller
120GB 3.0G SATA			HP Smart Array P410/512MB with FBWC
100GB 3.0G SATA			HP Smart Array P410/1G with FBWC
60GB 3.0G SATA			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache

### Storage

HP Smart Array P812/1G Flash Backed Cache Controller

#### 6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
200GB 6G SAS SLC SFF	Up to 8	1-8	HP Smart Array P410/256 MB Controller
400GB 6G SAS SLC SFF			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

#### 6G SAS Hot Plug Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
800GB 6G SAS MLC SFF	Up to 8	1-8	HP Smart Array P410/256 MB Controller
400GB 6G SAS MLC SFF			HP Smart Array P410/512 MB with BBWC Controller
200GB 6G SAS MLC SFF			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 8	External	HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB Controller
			HP Smart Array P411/1G Flash Backed Cache Controller
			HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 4	External	HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/1G Flash Backed Cache Controller
			HP Smart Array P812/1G Flash Backed Cache Controller

### Storage

#### Maximum Storage Capacity - (with D2700, DL380 G7 SFF SAS HDD)

Internal	19.2TB (16 x 1.2TB SAS SFF with addition 8 SFF drive cage)
External	120TB (100 x 1.2TB SAS SFF)
Total	139.2TB

#### Maximum Storage Capacity - (with D2700, DL380 G7 LFF SATA HDD)

Internal	24TB (16 x 4TB SATA LFF)
External	120TB (100 x 1.2TB SAS SFF)
Total	144TB

### Tape and Disk Backup

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see: <http://www.hp.com/go/tape>. For the complete range of D2D Backup Systems see: <http://www.hp.com/go/d2d>. For the complete range of RDX drives and media see: <http://www.hp.com/go/rdx>. For hardware and software compatibility of HP disk and tape backup products see: <http://www.hp.com/storage/SPOCK>.

	Position Supported	Controller	Part Number
<b>HP SCSI Tape Drives, External</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
<p><b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a></p>			
<b>HP USB Tape Drives, External</b> DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
<b>HP SAS Tape Drives, External</b> DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21

### Storage

LTO-4 Ultrium 1760  
 LTO-4 Ultrium 1840  
 LTO-5 Ultrium 3000  
 LTO-5 Ultrium 3280  
 1U Rack-Mount Kit  
 3U Rack-Mount Kit

<p><b>HP SAS Tape Drives, External</b>                  DAT 160                  DAT 320                  LTO-2 Ultrium 448                  LTO-3 Ultrium 920                  LTO-4 Ultrium 1760                  LTO-4 Ultrium 1840                  LTO-5 Ultrium 3000                  LTO-5 Ultrium 3280                  1U Rack-Mount Kit                  3U Rack-Mount Kit</p>	<p>External</p>	<p>HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter</p>	<p>412911-B21</p>
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<p><b>HP SCSI Tape Libraries, External</b>                  MSL2024                  MSL4048                  MSL8096                  MSL6000</p>	<p>External</p>	<p>HP U320e SCSI Dual Channel Host Bus Adapter</p> <p><b>NOTE:</b> Please check the full compatibility information at:  <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a></p>	<p>AH627A</p>
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<p><b>HP SAS Tape Autoloaders and Libraries, External</b>                  1/8 G2 Autoloader                  MSL2024                  MSL4048                  MSL8096</p>	<p>External</p>	<p>HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller</p> <p><b>NOTE:</b> Please check the full compatibility information at:  <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a></p>	<p>462828-B21</p>
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<p><b>HP Fibre Channel Tape Libraries, External</b>                  MSL2024                  MSL4048                  MSL8096                  MSL6000</p>	<p>External</p>	<p>Please consult the EBS connectivity matrix at:  <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.</p>	<p>N/A</p>
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<p><b>HP USB RDX Removable Disk Backup System, External</b>                  RDX160                  RDX320                  RDX500                  RDX750</p>	<p>External</p>	<p>USB 2.0 port</p>	<p>N/A</p>
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### Storage

RDX1TB

<b>HP D2D Backup Systems, iSCSI</b> D2D2500i D2D4000i	Rack Mount	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	N/A
<b>HP D2D Backup Systems, Fibre Channel</b> D2D4000fc	Rack Mount	Direct server attach is not supported, requires connection via SAN fabric. See: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	N/A

### Power Specifications

<b>HP 460W Common Slot Gold Hot Plug Power Supply Kit</b>							
Part Number	503296-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current ( A rms )	5.5	4.5	2.6	2.5	2.4	2.3	2.2
Maximum Rated Input Wattage Rating ( Watts )	526	520	505	505	503	503	503
Maximum Rated VA ( Volt-Amp )	548	542	527	527	524	524	524
Efficiency ( % )	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	1794	1773	1725	1725	1715	1715	1715

<b>HP 460W Common Slot Platinum Hot Plug Power Supply Kit</b>							
Part Number	593188-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage Rating	460	460	460	460	460	460	460
Nominal Input Current ( A rms )	5.3	4.3	2.5	2.4	2.3	2.2	2.1
Maximum Rated Input Wattage Rating ( Watts )	512	505	493	493	492	492	491
Maximum Rated VA ( Volt-Amp )	526	518	506	506	505	505	504
Efficiency ( % )	89.8	91.2	93.2	93.3	93.5	93.6	93.6
Power Factor	0.985						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	1747	1722	1683	1682	1679	1678	1677



### Power Specifications

<b>HP 750W Common Slot Gold Hot Plug Power Supply Kit</b>							
Part Number	512327-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current ( A rms )	8.9	7.4	4.3	4.1	3.9	3.7	3.6
Maximum Rated Input Wattage Rating ( Watts )	857	847	824	824	820	820	820
Maximum Rated VA ( Volt-Amp )	894	884	859	854	854	854	
Efficiency ( % )	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	2925	2892	2812	2812	2797	2797	2797

<b>HP 750W Common Slot Platinum Hot Plug Power Supply Kit</b>							
Part Number	593831-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage Rating	750	750	750	750	750	750	750
Nominal Input Current ( A rms )	8.6	7.1	4.2	4.0	3.8	3.6	3.4
Maximum Rated Input Wattage Rating ( Watts )	841	828	809	808	807	806	805
Maximum Rated VA ( Volt-Amp )	863	850	830	829	828	827	826
Efficiency ( % )	89.2	90.6	92.7	92.8	93	93.1	93.2
Power Factor	0.985						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	2868	2825	2761	2757	2753	2749	2747

### Power Specifications

HP 1200W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	578322-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	<b>100</b>	<b>120</b>	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current ( A rms )	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating ( Watts )	889	989	1290	1290	1290	1290	1290
Maximum Rated VA ( Volt-Amp )	927	1031	1345	1345	1345	1345	1345
Efficiency ( % )	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	3033	3375	4403	4403	4403	4403	4403

HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit			
Part Number	437573-B21		
Input Voltage Range ( V rms )	36-72		
Frequency Range (Nominal) ( Hz )	DC		
Nominal Input Voltage ( Vrms )	<b>36</b>	<b>48</b>	<b>72</b>
Maximum Rated Output Wattage Rating	1200	1200	1200
Nominal Input Current ( A rms )	38	28	19
Maximum Rated Input Wattage Rating ( Watts )	1380	1350	1365
Maximum Rated VA ( Volt-Amp )	1380	1350	1365
Efficiency ( % )	87	89	88
Power Factor	N/A		
Leakage Current ( mA )	N/A		
Maximum Inrush Current ( A peak )	20	25	35
Maximum Inrush Current duration ( mS )	1	1	3
Maximum British Thermal Unit Rating ( BTU-Hr )	4713	4610	4662

**NOTES:** To review typical system power ratings use the HP Power Advisor which is available online 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)

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	SFF Drives: 3.38 x 17.54 x 27.25 in (8.59 x 44.55 x 69.22 cm) LFF Drives: 3.38 x 17.54 x 29.25 in (8.59 x 44.55 x 74.30 cm)	
	<b>Weight</b> (approximate)	Maximum (all hard drives, power supply, and processor installed)	60.00 lb (27.27 kg)
		Minimum (one hard drive, power supply, and processor installed)	47.18 lb (21.45 kg)
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	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)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	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>	Maximum
	<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the HP Power Advisor which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>	
	<b>Power Supply Output</b> (per power supply)	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:

### Technical Specifications

		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)
	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 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 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	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
<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 SKU</b> <b>2P SKU</b>
	LWAd	4.1 B                              4.7 B
	LpAm	22 dBA                            28 dBA

### Technical Specifications

	Operating	1P SKU	2P SKU
	LWAd	4.1 B	4.7 B
	LpAm	22 dBA	28 dBA
<b>Emissions Classification (EMC)</b>	FCC Rating	Class A	
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1	

**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.

### Integrated Lights-Out 3 (iLO 3) integrated on system board

<b>Architecture</b>	PCI Express based health and remote management ASIC
<b>Processor</b>	PCI Express RISC processor core running at 250MHz
<b>Upgradeability</b>	Option firmware upgradeable via Flash ROM
<b>Video Support</b>	1600 x 1200 DVR max resolution
<b>Interfaces</b>	One Ethernet Sideband connection (10/100/1000 Mb/s) One Ethernet network connection (10/100Mb/s)
<b>Memory</b>	128-MB DDR with ECC
<b>Operating System Support</b>	Microsoft Windows 2008 R2 Microsoft Windows 2008 (32 bit and 64 bit) Microsoft Windows Server 2008 Standard Edition (32 bit and 64 bit) Microsoft Windows Server 2008 Enterprise Edition (32 bit and 64 bit) Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Embedded Systems Standard Edition, Enterprise Edition Red Hat Enterprise Linux 5.4 (32 bit and 64 bit) SUSE LINUX Enterprise Server 11 (32 bit and 64 bit) SUSE LINUX Enterprise Server 10 (32 bit and 64 bit) VMware ESX 4.0 VMware ESX 3.5.0 Microsoft Windows 7 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions
<b>Client System Support</b>	Red Hat Enterprise Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10 Microsoft Internet Explorer 8 Microsoft Internet Explorer 7

### Technical Specifications

<b>Client Browser Support</b>	Microsoft Internet Explorer 6 Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
<b>Command Line Support</b>	Secure Shell and serial port access
<b>Security</b>	Secure Socket Layer Secure Shell version 2 Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface AES encryption of video RC4 encryption of video
<b>Directory Support Services</b>	Active Directory v1.0 (Windows 2003)
<b>Driver Support</b>	HP ProLiant iLO3 Management Controller Driver Package
<b>Management protocols supported</b>	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

### Smart Array P410i Controller

<b>Dimensions</b>	Embedded
<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 4GB/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

<b>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters</b>	<b>Network Interface</b>	10Base-T/100Base-TX/1000Base-TX	
	<b>Compatibility</b>	EEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 802.3ad 1000Base-TX	
		IEEE 802.1p 100Base-TX	
		IEEE 802.1q 100Base-TX	
	<b>Data Transfer Method</b>	PCI Express, four lanes (x4)	
	<b>Controller</b>	BCM5709C	
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s
10Base-T (Full-Duplex)		20 Mb/s	
100Base-TX (Half-Duplex)		100 Mb/s	
100Base-TX (Full-Duplex)		200 Mb/s	
1000Base-TX (Half and Full-Duplex)		2000Mb/s	
<b>Connector</b>	Two RJ-45		
<b>Cable Support</b>	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)	
	100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)	
	1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)	

**Environment-friendly Products and Approach**     **End-of-life Management and Recycling**     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: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> 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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### Technical Specifications

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