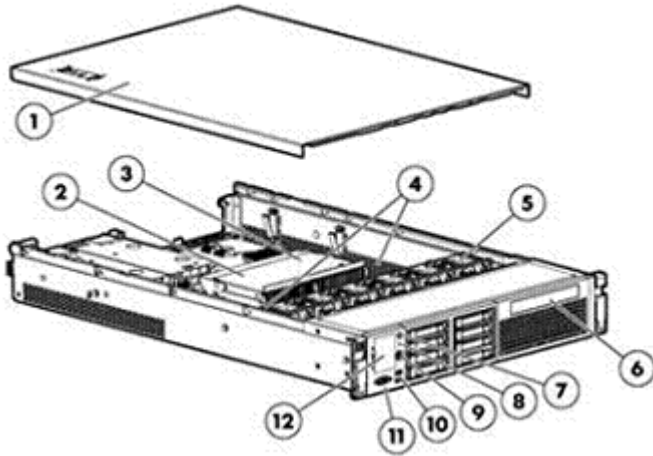


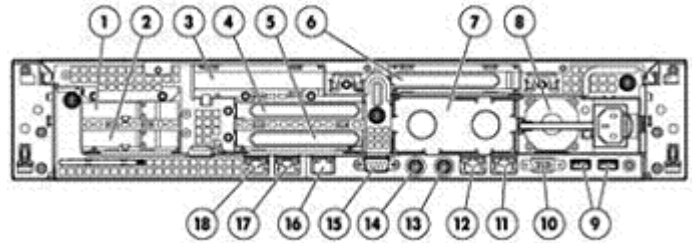
### Overview

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	Six-Core Processors
One of the following depending on Model	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 1/1/1/1/2/2) 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® X5677 (3.46GHz/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® 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
	Intel® Xeon® Processor E5506 (2.13 GHz/4-core/4MB/80W, DDR3-800) Processor
	Dual-Core Processors
	Intel® Xeon® E5503 (2.0GHz/2-core/4MB/80W), DDR3-800) Processor
	<b>NOTE:</b> HT indicates that the processor model supports Intel® Hyper-Threading Technology.
	<b>NOTE:</b> Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 6, 5, 4, 3, 2, and 1 cores active.
	<b>NOTE:</b> DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
	<b>NOTE:</b> 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.
	<b>NOTE:</b> Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.

Cache Memory	Up to 12MB (1x12MB) Level 3 cache for all 5600 series processors
One of the following depending on Model	Up to 8MB (1 x 8MB) Level 3 cache for all 5500 series processors

## Standard Features

Chipset	Intel® 5520 Chipset <b>NOTE:</b> For more information regarding Intel chipsets, please see the following URL: <a href="http://www.intel.com/products/server/chipsets/">http://www.intel.com/products/server/chipsets/</a> .	
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.
	<b>NOTE:</b> If only one processor is installed, only half the DIMM slots are available <b>NOTE:</b> If only one processor is installed, only half the DIMM slots are available. <b>NOTE:</b> when populating with the 16GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated. <b>NOTE:</b> 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). <b>NOTE:</b> UDIMM support is only on 12-slot servers. <b>NOTE:</b> 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: <a href="http://www.hp.com/go/ddr3memory-configurator">www.hp.com/go/ddr3memory-configurator</a> .	
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	Expansion	Technology	Bus	Connector	Bus Number*	Form Factor	Notes
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### Standard Features

(Standard)

Slots #	Technology	Width**	Width	Bus Number*	Form Factor
1	PCIe Gen2	X8	X16	7	Full Length, Full Height Slot
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

Internal Storage Devices	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	
Maximum Internal Storage	Hot Plug SFF SAS	16TB	16 x 1TB (with optional SFF drive cage)
	Hot Plug LFF SAS	18.0TB	6 x 3TB (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)
Interfaces	Serial	1	
	Video	2 (1 front, 1 back)	
	Network RJ-45	4	
	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	
Industry Standard Compliance	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).

#### 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).

#### System Fans

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

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

#### Required Cabling

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



Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	<div>Microsoft Windows Server</div> <div>Red Hat Enterprise Linux (RHEL)</div> <div>SUSE Linux Enterprise Server (SLES)</div> <div>Oracle Solaris</div> <div>VMware</div> <div>Citrix XenServer</div> <div><b>NOTE:</b> HP ProLiant DL380 G7 SFF X5698 Configure-to-order Server (660492-B21) OS support is only on Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), and Oracle Solaris</div> <div><b>NOTE:</b> 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: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a></div>
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Graphics	<div>Integrated ATI ES1000, 64MB video standard</div> <div><ul style="list-style-type: none"><li>16 bit color: maximum resolution of 1600 x 1200</li><li>32 bit color: maximum resolution of 1280 x 1024</li></ul></div> <div><b>NOTE:</b> 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).</div>
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Form Factor	<div>Rack (2U)</div> <div>Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)</div>
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HP Insight management software	<div>HP Insight Foundation</div> <div>Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.</div> <div>HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: <a href="http://www.hp.com/go/foundation">www.hp.com/go/foundation</a>.</div> <div>The foundation pack includes:</div> <div><ul style="list-style-type: none"><li>HP SmartStart</li><li>HP Management DVD</li><li>HP ProLiant Smart Update Firmware DVD</li></ul></div> <div>SmartStart version supported (minimum): SmartStart 8.40</div> <div><a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a></div> <div><b>NOTE:</b> In an effort to support reducing our environmental impact, the HP ProLiant Essentials Foundation Pack media will be available as a selectable option for this server at time of order of a Factory Integrated Model.. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.</div> <div>HP Integrated Lights-Out (iLO) for ProLiant</div> <div>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</div>
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Standard Features

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)

Security

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

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

#### HP Insight management software

##### 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.

Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See

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

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, please visit: <http://www.hp.com/services/insight>.

##### 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.

**NOTE:** For more information, visit:

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



### Optional Features

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>
	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>

### 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 MSAxxx, 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>.

### HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, 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.

#### 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.

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

Performance Models

Six-Core Models	Processor(s)	(2) Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W), DDR3-1333, HT, Turbo 1/1/1/1/2/2) Processors
HP ProLiant DL380 G7	Two of the following	(2) Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processors
X5690 2P 12GB-R	depending on Model	(2) Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) Processors
P410i/1GB 8 SFF 750W		
RPS Svr		
633404-xx1		
	Cache Memory	12MB (1 x 12MB) Level 3 cache
HP ProLiant DL380 G7	Memory	12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
X5660 2P 12GB-R		<b>NOTE:</b> Total of 18 DIMM slots.
P410i/1GB FBWC 8 SFF		
750W RPS Perf IC Svr	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
583970-xx1	Storage Controller	HP Smart Array P410i/1GB with FBWC
	Hard Drive	None ship standard
HP ProLiant DL380 G7	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays
X5650 2P 12GB-R		Optional: 16 SFF SAS/SATA HDD Bays
P410i/1GB FBWC 8 SFF		
750W RPS Perf IC Svr	Optical Drive	HP Slim SATA DVD RW drive
583966-xx1	Power Supply	(2) 750W Hot Plug Power Supplies
	Fans	(6) (N+1 redundancy standard)
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	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

#### Base Models

<b>Six -Core Models</b> <b>HP ProLiant DL380 G7</b> <b>E5649 1P 6GB-R</b> <b>P410i/256 8 SFF 460W</b> <b>PS Svr</b> <b>633405-xx1</b>	<b>Processor(s)</b> <a href="#">One of the following depending on Model</a>	(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 1/1/1/1/2/2) Processor
	<b>Cache Memory</b>	12MB (1 x 12MB) Level 3 cache
	<b>Memory</b>	6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs <b>NOTE: Total of 18 DIMM slots.</b>
<b>HP ProLiant DL380 G7</b> <b>E5645 1P 6GB-R</b> <b>P410i/256 8 SFF 460W</b> <b>PS Server</b> <b>633407-xx1</b>	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/256MB Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	None ship standard
	<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>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

<b>Quad-Core Models</b> <b>HP ProLiant DL380 G7</b> <b>E5640 1P 6GB-R</b> <b>P410i/256 8 SFF 460W</b> <b>PS Base Server</b> <b>583967-xx1</b>	<b>Processor(s)</b> <a href="#">One of the following depending on Model</a>	(1) Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor (1) Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor 1) Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
	<b>Cache Memory</b>	12MB (1 x 12MB) Level 3 cache
	<b>Memory</b>	6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs <b>NOTE: Total of 18 DIMM slots.</b>
<b>HP ProLiant DL380 G7</b> <b>E5630 1P 6GB-R</b> <b>P410i/256 8 SFF 460W</b> <b>PS Base Server</b> <b>589150-xx1</b>	<b>Network Controller</b>	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	<b>Storage Controller</b>	HP Smart Array P410i/256MB Controller
	<b>Hard Drive</b>	None ship standard
	<b>Internal Storage</b>	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	<b>Optical Drive</b>	None ship standard
	<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>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.



### Pre-configured Models

#### Entry Models

Quad-Core Models HP ProLiant DL380 G7 E5606 1P 4GB-R P410i/ZM 8 SFF 460W PS Server 633408-xx1	Processor(s) <a href="#">One of the following depending on Model</a>	(1) Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-1066) Processor (1) Intel® Xeon® Processor E5506 (2.13 GHz/4-core/4MB/80W, DDR3-800) Processor
	Cache Memory	4MB (1 x 4MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs <b>NOTE:</b> Total of 18 DIMM slots.
HP ProLiant DL380 G7 E5506 1P 4GB-R P410i/ZM 8 SFF 460W PS Entry Server 583968-xx1	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/Zero Memory 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.

#### Efficiency Model

Quad-Core Models HP ProLiant DL380 G7 L5630 1P 4GB-U P410i/ZM 4 SFF 460W PS Efficiency Server 583969-xx1	Processor(s)	(1) Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT, Turbo 1/1/2/2) Processor
	Cache Memory	12MB (1 x 4MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs <b>NOTE:</b> Total of 18 DIMM slots.
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/Zero Memory 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 94% Efficient 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

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC



### 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)

HP Models	<p>HP ProLiant DL380 G7 SFF Configure-to-order Server</p> <p><b>Factory Integrated Model ships with:</b></p> <p>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters Smart Array P410i Controller I/O slots - 3 Slots come standard:</p> <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)</li> <li>Additional Slots may be added via selections from the PCI Information and Options subsection</li> </ul> <p>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)</p>	583914-B21
	<p><b>NOTE:</b> Power Supply not included - choose from Options section</p> <p>HP ProLiant DL380 G7 SFF X5698 Configure-to-order Server</p> <p><b>NOTE:</b> specifically supports X5698 Processor Performance Pack (64344-B21), which is listed below in Section 3</p> <p><b>NOTE:</b> a 1 year Warranty applies to this solution</p> <p><b>NOTE:</b> There is no Carepack support or contractual support for this server model (660492-B21)</p> <p><b>Factory Integrated Model ships with:</b></p> <p>Two HP NC382i Dual Port Multifunction Gigabit Server Adapters Smart Array P410i Controller w/ 1G FBWC I/O slots - 6 Slots come standard:</p> <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)</li> <li>Slot 4 - FL/FH x8 PCIE (x16 connector)</li> <li>Slot 5 - HL/FH x4 PCIE (x8 connector)</li> <li>Slot 6 - HL/FH x4 PCIE (x8 connector)</li> </ul> <p>System Fans - 6 USB - 2 Rear, 2 Front, 1 Internal, 1 SD slot Server Management - (iLO 3) (embedded)</p>	660492-B21
	<p><b>NOTE:</b> Memory, HD options, PCI Cards options can be added as desired from below Sections 2, 3, 4</p> <p>HP ProLiant DL380 G7 LFF Configure-to-order Server</p> <p><b>Factory Integrated Model ships with:</b></p>	583917-B21



Configuration Information - Factory Integrated Models

- Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
- Smart Array P410i Controller
- I/O slots - 3 Slots come standard:
  - Slot 1 - FL/FH x8 PCIE (x16 connector)
  - Slot 2 - HL/FH x4 PCIE (x8 connector)
  - Slot 3 - HL/FH x4 PCIE (x8 connector)
    - Additional Slots may be added via selections from the PCI Information and Options subsection
- 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)
- NOTE: Power Supply not included - choose from Options section
- NOTE: 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 Performance Pack	<div>NOTE: If HP ProLiant DL380 G7 SFF X5698 Configure-to-order Server (PN 660492-B21) is selected in Step 1 above, then you MUST select PN 643411-B21 instead of an xxxxxx-L21 HP Processor listed below.</div> <div>HP DL380 G7 X5698 HPM FIO Performance Pack643411-B21</div> <div>NOTE: Must be ordered with 660492-B21 Chassis in Section 1.</div> <div>NOTE: Performance Pack includes the following components:<ul style="list-style-type: none"><li>Qty 2 Intel® Xeon® E5698 (4.4GHz/2-core/12MB/130W Processors</li><li>1G FBWC</li><li>Qty 2 750w Power Supplies</li><li>ATA DVD RW</li></ul></div>														
HP Processors	<div>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 corresponding HP Performance Pack from Step 3 below.</div> <div>Six-Core Processors</div> <tr><td>HP DL380 G7 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) FIO Processor Kit</td><td>633410-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit</td><td>633414-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit</td><td>587493-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit</td><td>587491-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit</td><td>587482-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit</td><td>633418-L21</td></tr> <tr><td>HP DL380 G7 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit</td><td>633420-L21</td></tr>	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® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit	587493-L21	HP DL380 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit	587491-L21	HP DL380 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit	587482-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
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® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit	587493-L21														
HP DL380 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit	587491-L21														
HP DL380 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit	587482-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														

### Configuration Information - Factory Integrated Models

HP Memory	HP DL380 G7 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) FIO Processor Kit	587507-L21
	<b>Quad-Core Processors</b>	
	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® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit	587476-L21
	HP DL380 G7 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit	587505-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
	<b>Registered DIMMs (RDIMMs)</b>	
	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
	<b>NOTE:</b> 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
	<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 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 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



### Configuration Information - Factory Integrated Models

**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 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 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-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 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21

**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 Storage Controllers

**NOTE:** If Additional Memory Cache Module or Controller is Required please pick one of the following:

HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
HP Smart Array P410/256 BBWC 2-ports Int PCIe x8 FIO SAS Controller	491195-B21
HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21

#### 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



Configuration Information - Factory Integrated Models

HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A

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.

HP Unique Options	HP DL380 G6 8 Small Form Factor (SFF) Drive Cage Kit	516914-B21
	<b>NOTE:</b> Second drive cage installation replaces internal optical bay.	
	<b>NOTE:</b> Second drive cage requires second controller or HP SAS Expander Card (468406-B21).	
	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® X5680 (3.33GHz/6-core/12MB/130W) Processor Kit	587498-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

#### Dual-Core Processors

HP DL380 G7 Intel® Xeon® E5503 (2.0GHz/2-core/4MB/80W) Processor Kit	587500-B21
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### Core Options

#### 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

**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 Optical Drives

HP Slim 12.7mm SATA DVD-RW Optical Drive 481043-B21

**NOTE:** Included in performance models.

HP Slim 12.7mm SATA DVD-ROM Optical Drive 481041-B21

**NOTE:** 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,





### Core Options

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

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
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 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21

#### 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 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\\_div/12244\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html)  
(Worldwide)

#### 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 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21

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

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



### Core Options

HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21
<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>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>NOTE: Please see the QuickSpecs for Technical Specifications and additional information:</b>	
<a href="http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html">http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html</a> (Worldwide)	
<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
<b>6G SAS Hot Plug Enterprise Mainstream Solid State Drives</b>	
HP 800GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632506-B21
HP 400GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632504-B21
HP 200GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632502-B21
<b>NOTE: Please see the QuickSpecs for Technical Specifications and additional information:</b>	
<a href="http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html">http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html</a> (Worldwide)	



### 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 4X DDR PCI-E 0 Memory Dual Port HCA	483513-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\\_div/13078\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.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 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
HP 460W Common Slot Platinum Hot Plug Power Supply Kit	593188-B21
HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-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 1200W Common Slot -48VDC Hot Plug Power Supply Kit	437573-B21

**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 Electronic License T9074BAE

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License TC278AAE

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Tracking License TC275A

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License

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

**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

**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 Insight Control QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### HP Insight Control for Linux

HP Insight Control for Linux w/1yr 24x7 Supp ML/DL/SL Bundle Electronic 1 Svr LTU TC203AAE

HP Insight Control for Linux including 1yr 24x7 Support Electronic License TC213AAE

HP Insight Control for Linux including 1yr 24x7 Support Single Server License TC209A

HP Insight Control for Linux Media Kit TC208A

**NOTE:** Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.

**NOTE:** Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: <http://www.hp.com/go/ic-linux> (click on Download button).

**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

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

**NOTE:** For additional License Kits, including electronic licensing options, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/13019\\_div/13019\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html)

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

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License TA850AAE

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License 512485-B21



### Additional Options

HP Insight Software Media Kit	436222-B21
<b>NOTE:</b> Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	
<b>NOTE:</b> This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. 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 Service	
<b>NOTE:</b> Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.	
<b>NOTE:</b> For additional license kits, including electronic delivery options, please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html">http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html</a>	

### High Performance Clusters

<b>HP Cluster Management Utility</b>	
HP Cluster Management Utility Flexible License	QL803A
<b>NOTE:</b> This part number can be used to purchase one certificate for multiple licenses 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.	
HP Cluster Management Utility Media	433257-B21
<b>NOTE:</b> Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required.	
<b>NOTE:</b> For additional license kits please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html">http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html</a>	
<b>HP HPC Linux Value Pack</b>	
HP High Performance Computing Linux Value Pack 1 Processor Flexible License	TC293B
<b>NOTE:</b> 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	TC294A
<b>NOTE:</b> This part number can be used to purchase media including software and documentation, which will be delivered to the customer.	
<b>NOTE:</b> For additional license kits please see the QuickSpecs at: <a href="http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html">http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html</a>	



### Additional Options

HP Drive Cage Options	HP DL380 G6 8 Small Form Factor (SFF) Drive Cage Kit	516914-B21
	<p><b>NOTE:</b> Supports the HP ProLiant DL380 G7 server.</p> <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 I/O Accelerator Options	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers	600278-B21
	<b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers	600279-B21
	<b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe IO Accelerator	641027-B21
	<p><b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information:</p> <p><a href="http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html">http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html</a> (Worldwide)</p>	
HP Security - TPM	HP Trusted Platform Module Option	488069-B21
	<p><b>NOTE:</b> 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: <a href="http://www.hp.com/go/TPM">www.hp.com/go/TPM</a>.</p> <p><b>NOTE:</b> ProLiant OS pre-installed units will come with the partition required for TPM deployment.</p> <p><b>NOTE:</b> The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.</p>	
HP Storage Controllers	<b>SAS Controllers</b>	
	<b>Smart Array P410 Controller</b>	
	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
	<b>Smart Array P411 Controller</b>	
	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
	<b>Smart Array P812 Controller</b>	



### 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 512MB Flash Backed Write Cache 534916-B21

HP 1GB Flash Backed Cache 534562-B21

HP Chipset SATA Cable Kit 627121-B21

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

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

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

[http://h18000.www1.hp.com/products/quickspecs/13200\\_div/13200\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html)  
(Smart Array Advanced Pack)

#### SAS Controller Options

HP 24 Bay 6Gb SAS Expander Card 468406-B21

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

[http://h18004.www1.hp.com/products/quickspecs/13232\\_div/13232\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.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\\_div/13651\\_div.html](http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html)  
(SC08e 6Gb HBA)





### Additional Options

#### HP Power Cords

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

HP 1.83m 10A C13 Power Cord	AF556A
HP 1.83m 10A C13 EU Power Cord	AF568A
HP 1.83m 10A C13 UK Power Cord	AF570A
HP 1.83m 10A C13 DK Power Cord	AF566A
HP 1.83m 10A C13 CZ Power Cord	AF565A
HP 1.83m 10A C13 IT/CL Power Cord	AF571A
HP 2.5m 10A C13 ZA Power Cord	AF567A

#### HP Backup & Recovery Software

##### HP Data Protector Express

HP Data Protector Express V5.0 for 1 Server E-LTU	TC330AAE
HP Data Protector Express V5.0 for 3 Servers E-LTU	TC331AAE
HP Data Protector Express V5.0 for 10 Servers E-LTU	TC332AAE
HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU	TC333AAE

**NOTE:** One of these Data Protector Express base products is required. To see available options: <http://www.hp.com/go/dataprotectorexpress>

#### 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>.

HP DAT 320 USB in 1U Rack-mount Kit	AP835B
HP 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
<b>NOTE:</b> Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	
HP DAT 320 SAS Internal Tape Drive	AJ830A
<b>NOTE:</b> 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 Ultrium 920 SAS Internal Tape Drive	EH847A
<b>NOTE:</b> 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 LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit	EH946B
<b>NOTE:</b> Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	
HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount	EJ014A
<b>NOTE:</b> Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	
HP 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader	BL536A
<b>NOTE:</b> Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	
HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A



### Additional Options

HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library	BL537A
<b>NOTE:</b> Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	
HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
HP MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library	BL538A
<b>NOTE:</b> Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended.	

### HP Disk Backup

<b>NOTE:</b> For the complete range of D2D Backup Systems see: <a href="http://www.hp.com/go/d2d">http://www.hp.com/go/d2d</a> . For the complete range of RDX drives and media see: <a href="http://www.hp.com/go/rdx">http://www.hp.com/go/rdx</a> . For hardware and software compatibility of HP disk backup products see: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a> .	
<b>HP D2D Backup Systems with Backup Data Deduplication</b>	
HP D2D2504i Backup System	EJ002B
<b>NOTE:</b> 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP D2D4112 Backup System	EH993B
<b>NOTE:</b> 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	
<b>HP RDX Removable Disk Backup Systems USB</b>	
HP StorageWorks RDX160 Removable Disk Backup System DL Server Module	AP724A
<b>NOTE:</b> Mounts in DL380 G6 second drive cage slot (160GB of Disk Storage)	
HP StorageWorks RDX320 Removable Disk Backup System DL Server Module	AP725A
<b>NOTE:</b> 320GB of disk capacity per data cartridge.	
HP StorageWorks RDX500 Removable Disk Backup System DL Server Module	AP726A
<b>NOTE:</b> 500GB of disk capacity per data cartridge.	
HP StorageWorks RDX1000 Removable Disk Backup System DL Server Module	BV848A

### HP Storage Options

<b>Storage Fibre Channel HBA</b>	
<b>NOTE:</b> For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: <a href="http://h18006.www1.hp.com/storage/saninfrastructure/hba.html">http://h18006.www1.hp.com/storage/saninfrastructure/hba.html</a>	
<b>Brocade Fibre Channel HBAs</b>	
HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A
HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter	AP767A
HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter	AP768A
<b>Emulex Fibre Channel HBAs</b>	
HP 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
HP 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
HP FC2142SR 4Gb PCIe Host Bus Adapter	A8002A
HP FC2242SR 4Gb PCIe DC Host Bus Adapter	A8003A



### Additional Options

#### QLogic Fibre Channel HBAs

HP 81Q PCI-e Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A
HP FC1142SR 4Gb PCIe Host Bus Adapter	AE311A
HP FC1242SR 4Gb PCIe DC Host Bus Adapter	AE312A

#### Storage SCSI HBA

HP U320e SCSI Dual Channel Host Bus Adapter	AH627A
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**NOTE:** Recommended HBA for MSL SCSI Tape Library connect.

#### SAN Switches

HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter	QR559A
HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter	QR558A

#### 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	AW520A

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

### 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
HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A

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

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

#### 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
HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A

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

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

#### HP Rack-Mountable R5500 UPS

HP R5500 6000VA INTL 3U Rackmount Uninterruptible Power System	AF416A
HP R5500 5000kVA NA/JP 3U Rackmount Uninterruptible Power System	AF426A



### Additional Options

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

[http://h18000.www1.hp.com/products/quickspecs/11871\\_div/11871\\_div.html](http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html)  
(Worldwide)

#### R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System AF461A

HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System AF460A

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

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

#### R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System AF462A

HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System AF463A

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

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

**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).

### Power Distribution Units

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

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

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF915A

#### 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 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit AF508A

HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit AF510A

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

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

#### 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 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

HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit 252663-B31

HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit 252663-B24

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

**NOTE:** Please see the following QuickSpecs for additional options including shorter



### Additional Options

jumper cables and country specific power cords:

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

**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 NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A

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

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

#### HP Rack Series

##### HP Rack 10000 G2 Series (Carbon/Graphite Metallic)

HP 10642 G2 Pallet Universal Rack	AF001A
HP 10642 G2 Shock Universal Rack	AF002A
HP 10642 G2 1200mm deep Shock Rack	AF092A
HP 10647 G2 1200mm deep Shock Rack	AF094A

**NOTE:** It is mandatory to use a shock pallet when shipping racks with equipment installed.

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

[http://h18000.www1.hp.com/products/quickspecs/12402\\_div/12402\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html)  
(Worldwide)

**NOTE:** For additional information regarding Rack Cabinets, please see the following URL: <http://www.hp.com/go/rackandpower>.

**NOTE:** The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.



### Additional Options

**CAUTION:** If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

**CAUTION:** Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

**NOTE:** Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

**NOTE:** High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL380 in 7000 series racks. The DL380 Cable Management Arm is not supported on 7000 series racks.

**NOTE:** Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.

#### HP Rack Options

##### HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21
HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21

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

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

##### HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A

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

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

##### 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



### Additional Options

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

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

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

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

HP USB and SD options	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB Secure Digital High Capacity 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 like SmartStart. 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 Mobile USB DVDRW Drive US	BU516AA#ABA

HP Care Pack Services	<b>Hardware Services On-site Service</b>	
	HP 3 year 4 hour 13x5 ProLiant DL38x Hardware Support	U4544E
	HP 4 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8101E
	HP 5 year 4 hour 13x5 ProLiant DL38x Hardware Support	U8067E
	HP 3 year 4 hour 24x7 ProLiant DL38x Hardware Support	U4545E
	HP 4 year 4 hour 24x7 ProLiant DL38x Hardware Support	U8118E
	HP 5 year 4 hour 24x7 ProLiant DL38x Hardware Support	U8084E
	<b>Hardware Services 6-Hour Call to Repair On-site Service</b>	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL38x Hardware Support	U4546E
	HP 4 year 6 hour 24x7 Call to Repair ProLiant DL38x Hardware Support	U9738E
	HP 5 year 6 hour 24x7 Call to Repair ProLiant DL38x Hardware Support	U9737E
	HP 3 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP717E
	HP 4 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP718E
	HP 5 year 24x7 24 hour Call to Repair ProLiant DL38x Hardware Support	UP719E
	<b>Installation &amp; Start-up Services</b>	
	HP Install ProLiant DL38x Service	U4554E
	HP 4 year Next business day ProLiant DL38x Hardware Support	UA010E



Additional Options

HP 5 year Next business day ProLiant DL38x Hardware Support	UA009E
HP Startup ProLiant DL38x Service	U4555E
HP Installation and Startup for Insight Control Server Deployment - previously Rapid Deployment Pack	U5683E
HP Installation of ProLiant Add On/In Options Service	UH745E
<b>Support Plus 24</b>	
HP 3 year Support Plus 24 Microsoft ProLiant DL38x Service	U4557E
HP 3 year Support Plus 24 SuSE ProLiant DL38x Service	U6312E

**NOTE:** For more information, customer/resellers can contact:  
<http://www.hp.com/services/carepack>





## 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
SLOTS THAT CAN BE POPULATED												
18 slot servers	18	18	18	18	18	18	12	12	12	12	12	12
MAXIMUM CAPACITY (GB)												
	72	36	72	144	144	288	48	192	384	12	24	48
POPULATED DIMM SPEED (MHz)												
1 DIMM Per Channel	1333	1333	1333	1066	1333	1333	1066	1066	1066	1333	1333	1333



## Memory

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	

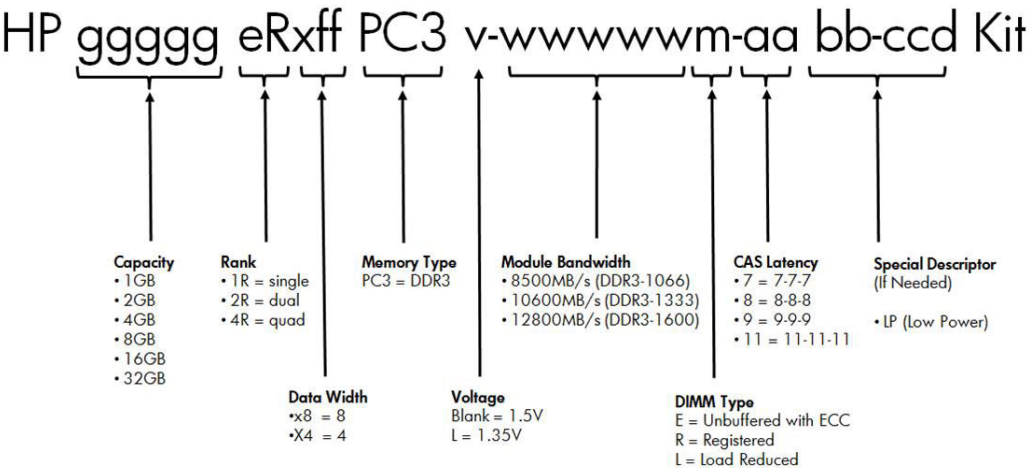
**NOTE:** Capacity references are rounded to the common Gigabyte values.

- 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
	<b>NOTE:</b> 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
	<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 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

### Memory

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

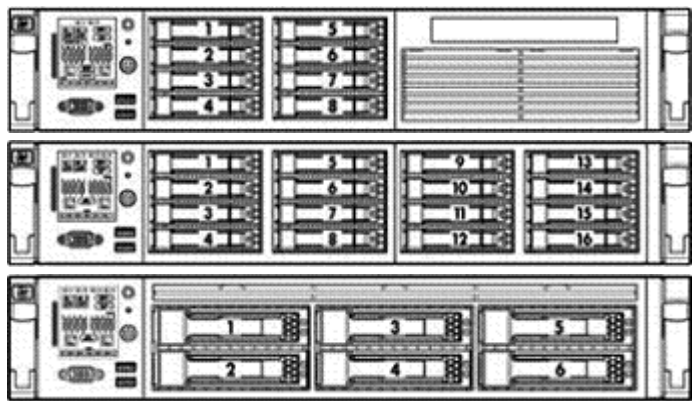
**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: [www.hp.com/go/ddr3memory-configurator](http://www.hp.com/go/ddr3memory-configurator).

**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



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
Removable Media			
HP Slim SATA DVD RW Optical Drive	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
900GB 6G SAS 10K	Up to 8	1-8	HP Smart Array P410/256 MB Controller
600GB 6G SAS 10K			HP Smart Array P410/512 MB with BBWC Controller
450GB 6G SAS 10K			HP Smart Array P410/512MB with FBWC
300GB 6G SAS 10K			HP Smart Array P410/1G with FBWC
300GB 6G SAS 15K			HP Smart Array P411/256MB Controller
146GB 6G SAS 15K			HP Smart Array P411/512MB with BBWC Controller
72GB 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	Up to 8	1-8	HP Smart Array P410/256 MB Controller
500GB 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

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



### Storage

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

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



### Storage

	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, SAS HDD)

Internal	16TB (16 x 1TB SAS SFF with addition 8 SFF drive cage)
External	100TB (100 x 1TB SAS SFF)
Total	116TB

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

Internal	16TB (16 x 1TB SAS SFF with additional 8 SFF drive cage)
External	100TB (100 x 1TB SATA SFF)
Total	116TB

### 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>	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
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			
		<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>	
<b>HP USB Tape Drives, External</b>	External	USB 2.0 Port	N/A
DAT 40			
DAT 72			
DAT 160			
DAT 320			
1U USB Rack-Mount Kit			
<b>HP SAS Tape Drives, External</b>	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
DAT 160			
DAT 320			
LTO-2 Ultrium 448			
LTO-3 Ultrium 920			
LTO-4 Ultrium 1760			
LTO-4 Ultrium 1840			



### Storage

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

<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	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
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<b>HP SCSI Tape Libraries, External</b> MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Host Bus Adapter  <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>	AH627A
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<b>HP SAS Tape Autoloaders and Libraries, External</b> 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller  <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>	462828-B21
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<b>HP Fibre Channel Tape Libraries, External</b> MSL2024 MSL4048 MSL8096 MSL6000	External	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.	N/A
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<b>HP USB RDX Removable Disk Backup System, External</b> RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 port	N/A
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Storage

HP D2D Backup Systems, iSCSI 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
HP D2D Backup Systems, Fibre Channel 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

HP 460W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	503296-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	100	120	200	208	220	230	240
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

HP 460W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	593188-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	100	120	200	208	220	230	240
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

HP 750W Common Slot Gold Hot Plug Power Supply Kit							
Part Number	512327-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	100	120	200	208	220	230	240
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

HP 750W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	593831-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	100	120	200	208	220	230	240
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 )	100	120	200	208	220	230	240
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 )	36	48	72
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

System Unit	Dimensions (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)
	Weight (approximate)	Maximum 60.00 lb (27.27 kg) (all hard drives, power supply, and processor installed)
		Minimum 47.18 lb (21.45 kg) (one hard drive, power supply, and processor installed)
	Input Requirements (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)
	BTU Rating	Maximum For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Specifications	<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>
	Power Supply Output (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: 750 W (at 100 to 120 VAC),



Technical Specifications

		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)
System Inlet Temperature	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).
Relative Humidity (non-condensing)	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.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). <b>NOTE:</b> The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Idle	1P SKU2P SKU
	LWAd	4.1 B4.7 B
	LpAm	22 dBA28 dBA
	Operating	1P SKU2P SKU



Technical Specifications

Emissions Classification (EMC)	LWAd	4.1 B	4.7 B
	LpAm	22 dBA	28 dBA
	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	Architecture	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM
	Video Support	1600 x 1200 DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s) One Ethernet network connection (10/100Mb/s)
	Memory	128-MB DDR with ECC
	Operating System Support	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
Client System Support	Microsoft Windows 7	
	Microsoft Windows XP Professional Edition	
	Microsoft Windows Vista Business and Ultimate Editions	
	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

Client Browser Support	Microsoft Internet Explorer 6 Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
Command Line Support	Secure Shell and serial port access
Security	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
Directory Support Services	Active Directory v1.0 (Windows 2003)
Driver Support	HP ProLiant iLO3 Management Controller Driver Package
Management protocols supported	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

Dimensions	Embedded
Disk Drive and Enclosure Interface - transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
SAS Connectors	2 internal 4X connectors
Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
Cache Memory	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)
Logical Drives Supported	Up to 64 logical drives with cache
Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
RAID Support	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

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	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	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	BCM5709C	
	Network Transfer Rate	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	
Connector	Two RJ-45		
Cable Support	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)	
<hr/>			
Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>	

### *Technical Specifications*

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

