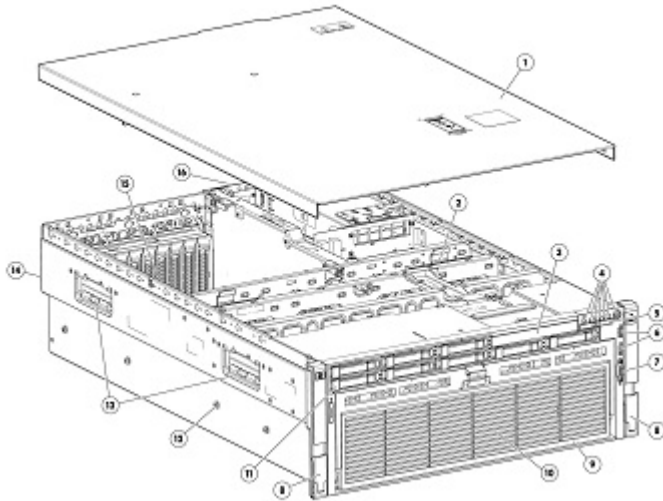


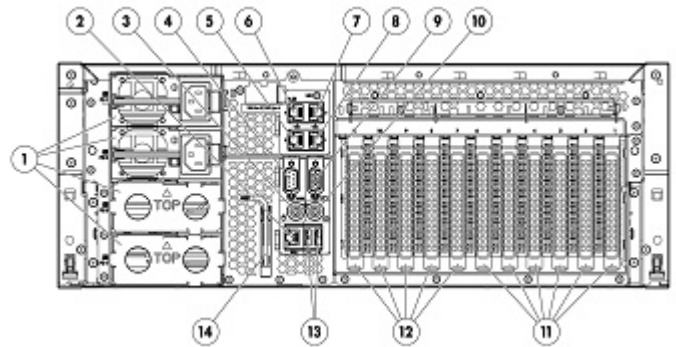
### Overview

Powered by latest AMD Opteron® 8, 12 and 16 core processors, the HP ProLiant DL585 G7 is the most expandable 4P multi-core rack mount server ideal for server virtualization, server consolidation, multi-tiered enterprise application, and corporate infrastructure applications.



#### Front View:

1. Quick Removal Access Panel
2. 4 Hot Plug Redundant Fans Standard on all models
3. Slimline Drive (DVD Drive optional)
4. Front Panel LED Display and Power Button
5. Slide-out Systems Insight Display
6. Two front accessible USB 2.0 ports
7. One front video port
8. Quick release levers for fast server access
9. Front accessible Processor and memory drawer
10. Support for up to four AMD Opteron processors
11. Support for up to eight hot plug Small Form-Factor (SFF) SAS/ Serial ATA (SATA)/Solid State drives
12. Universal Tool-less "Snap In" Sliding Rail Solution
13. Server Lifting Handles
14. 4U (7" Height) Rack Form Factor
15. Up to eleven available PCI Express/PCI-X Internal Expansion Slots



#### Rear View:

1. Hot Plug Redundant Power supplies (2 or 4 ship depending on the model)
2. Integrated Lights-Out 3 port
3. Mouse port
4. Serial port
5. Gigabit NIC Ports
6. Gigabit NIC Ports
7. Gigabit NIC Ports
8. Gigabit NIC Ports
9. Video port
10. Keyboard port
11. PCI-Express or PCI-X option (slots 1-6)
12. PCI-Express slots (slots 7-11)
13. Two USB ports
14. Service tool

### What's New

- Support for new AMD Opteron™ 6300 series 16 core processors
- Flexible technologies provide customer choice in networking with either a Broadcom or Qlogic solution
- Support for LRDIMM and Input/Output Memory Management Unit (IOMMU)

### Standard Features

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

#### Processor

Two or four of the following depending on Model

#### Sixteen-Core Processors

AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) Processor  
AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) Processor  
AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) Processor  
AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) Processor  
AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W) Processor  
AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W) Processor

#### Twelve-Core Processors

AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) Processor  
AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) Processor  
AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) Processor  
AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W) Processor  
AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/140W) Processor  
AMD Opteron™ 6174 (2.2GHz/12-core/12MB/115W) Processor  
AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W) Processor  
AMD Opteron™ 6168 (1.9GHz/12-core/12MB/115W) Processor  
AMD Opteron™ 6164HE (1.7GHz/12-core/12MB/85W) Processor  
AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W) Processor  
AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W) Processor  
AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/140W) Processor

#### Eight-Core Processors

AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) Processor  
AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) Processor  
AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) Processor  
AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W) Processor  
AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W) Processor  
AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W) Processor  
AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W) Processor  
AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W) Processor

#### Four-Core Processor

AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) Processor  
AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W) Processor

### Standard Features

**NOTE:** Processor wattage references reflect Thermal Design Power (TDP). For more information on TDP and Average CPU Power (ACP) visit: <http://www.amd.com/acp>.

**NOTE:** SmartStart version 8.70B or greater required by 6200 series processors. Latest version can be downloaded from the web at <http://www.hp.com/go/foundation>.

Cache Memory	16MB Level 3 cache
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Chipset	AMD SR5690/SP5100
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Upgradeability	Upgradeable to quad (4) processors <b>NOTE:</b> To upgrade from 2P to 4P the secondary CPU/Memory kit needs to be bought separately, part number listed in the options section. 4P models already have this kit configured.
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Memory Protection	Advanced ECC capabilities Online Spare Memory
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Memory One of the following depending on Model	Type	PC3-10600R Registered DDR3 (1333MHz)
	Performance Models	128GB (16x8GB) of PC3-10600R (DDR3-1333) 64GB (8x8GB) of PC3-10600R (DDR3-1333) 64GB (16x4GB) of PC3-10600R (DDR3-1333) 32GB (8x4GB) of PC3-10600R (DDR3-1333) 32GB (4x8GB) of PC3-10600R (DDR3-1333) 32GB (8x4GB) of PC3-10600R (DDR3-1333)
	Base Models	32GB (8x4GB) of PC3-10600 (DDR3-1333)
	Maximum	1.5TB

Network Controller One of the following depending on Model	HP NC375i Integrated Quad Port Gigabit Server Adapter <b>NOTE:</b> Optional Dual Port 10GbE upgrade (replaces two 1G ports). HP Ethernet 1Gb 4-port 331i-SPI Adapter
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### Expansion Slots

**NOTE:** Up to 11 FL/FH I/O slots. 2 PCI-E 2.0x16 and 3 PCI-E 2.0 x8 slots standard.

#### Expansion Slots (Main IO Board standard)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	N/A	N/A	N/A	N/A	
2	N/A	N/A	N/A	N/A	
3	N/A	N/A	N/A	N/A	
4	N/A	N/A	N/A	N/A	
5	N/A	N/A	N/A	N/A	

### Standard Features

6	N/A	N/A	N/A	N/A
7	PCI-Express	x8	x16	Full Length/Full Height
8	PCI-Express	x8	x16	Full Length/Full Height
9	PCI-Express	x16	x16	Full Length/Full Height
10	PCI-Express	x8	x16	Full Length/Full Height
11	PCI-Express	x16	x16	Full Length/Full Height

### Expansion Slots with IO Expander (combination PCI-X, PCI-e and 300W GPU)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCI-X	64-bit	N/A	Full Length/Full Height	
2	PCI-X	64-bit	N/A	Full Length/Full Height	
3	PCI-Express	x4	x8	Full Length/Full Height	
4	PCI-Express	x8	x16	Full Length/Full Height	
5	PCI-Express	x8	x16	Full Length/Full Height	
6	PCI-Express	x16	x16	Full Length/Full Height	
7	PCI-Express	x8	x16	Full Length/Full Height	
8	PCI-Express	x8	x16	Full Length/Full Height	
9	PCI-Express	x16	x16	Full Length/Full Height	
10	PCI-Express	x8	x16	Full Length/Full Height	
11	PCI-Express	x16	x16	Full Length/Full Height	

### Expansion Slots with I/O Expander (standard PCI-e option)

Expansion Slots #	Technology	Bus Width	Connector Width	Form Factor	Notes
1	PCI-Express	x8	x16	Full Length/Full Height	
2	PCI-Express	x8	x16	Full Length/Full Height	
3	PCI-Express	x16	x16	Full Length/Full Height	

### Standard Features

4	PCI-Express	x8	x16	Full Length/Full Height
5	PCI-Express	x8	x16	Full Length/Full Height
6	PCI-Express	x16	x16	Full Length/Full Height
7	PCI-Express	x8	x16	Full Length/Full Height
8	PCI-Express	x8	x16	Full Length/Full Height
9	PCI-Express	x16	x16	Full Length/Full Height
10	PCI-Express	x8	x16	Full Length/Full Height
11	PCI-Express	x16	x16	Full Length/Full Height

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

Performance Models	HP Smart Array P410i/1G FBWC Controller
Base Models	HP Smart Array P410i/512MB FBWC or Zero Memory Controller
The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite data retention.	
<ul style="list-style-type: none"> <li>• HP Smart Array P410i standard on all Performance and Base Models</li> <li>• 1G FBWC standard on all Performance Models</li> <li>• Transportable data protection</li> <li>• Increases overall controller performance</li> </ul>	

#### Internal Storage Devices

Diskette Drive	None
Optical Drives	Optional Optical Drive - HP Slim SATA DVD ROM Optical Drive ejectable for security and serviceability
Hard Drives	None standard
Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives
Drive Bays	Up to 8 Small Form Factor drive bays total

#### Maximum Internal Storage

Hot Plug SFF SAS	8TB	8 x 1TB
Hot Plug SFF SATA	8TB	8 x 1TB
Hot Plug SFF SSD	3.2TB	8 x 400GB
Hot Plug SFF SAS SSD	6.4TB	8 x 800GB

**NOTE:** There is an extra internal SSD slot available as well

### Standard Features

Interfaces	Serial	1
	Video	1 front, 1 rear
	Network RJ-45 (Ethernet)	4
	iLO 3 Remote Management	1
	Keyboard	1
	Pointing Device (Mouse)	1
	USB 2.0 Ports	6 total: 2 front; 2 rear; 2 internal

Industry Standard Compliance	ACPI 2.0. Compliant
	PCI 2.0 Compliant
	PXE Support
	WOL Support
	Physical Address Extension (PAE) Support
	Microsoft® Logo certifications
	USB 2.0 Support

Server Power Cords	<b>NOTE:</b> If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a>
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Power Specifications	To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> .
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**NOTE:** Power Specification and Technical Content for supported power supplies can be found at:  
[http://h18000.www1.hp.com/products/quickspecs/14209\\_div/14209\\_div.html](http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html)

Common Slot Power Supply	<b>NOTE:</b> Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.
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HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to [www.hp.com/go/ipd](http://www.hp.com/go/ipd).

### Standard Features

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).

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

**NOTE:** Two Hot Plug Power Supplies ships standard with 2P Models. Four Hot Plug Power Supplies ship standard with 4P Models.

#### System Fans

4 Hot plug, redundant fans (individually removable)

#### Required Cabling

For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl585](http://www.hp.com/servers/dl585)

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

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

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: [www.hp.com/go/ossupport](http://www.hp.com/go/ossupport)

#### Graphics

Integrated ATI RN-50 1600x1280x64K 16M color (32 MB DDR1 memory)

#### Form Factor

Rack (4U = 7 inches), ships with sliding rails and cable management system  
 Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility

#### HP Insight management software

HP Service Pack for ProLiant

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

### Standard Features

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

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

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

#### HP Insight Foundation

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

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

Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location:

- [www.hp.com/go/spp](http://www.hp.com/go/spp)
- [www.hp.com/go/spp/download](http://www.hp.com/go/spp/download)

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

HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can



### Standard Features

be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: [www.hp.com/go/iLO](http://www.hp.com/go/iLO)

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<b>Intelligent Manageability</b>	HP Systems Insight Manager software SmartStart Redundant ROM Remote Flash ROM Management Agents Integrated Management Log (IML) Automatic Server Recovery-2 (ASR-2) ROM-Based Setup Utility (RBSU) Dynamic Sector Repairing (with Smart Array Controllers) Drive Parameter Tracking (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SAS hard drives and memory) Redundant/adaptive load balancing NIC Support
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<b>HP Insight Online</b>	HP Insight Online is a new capability available through the HP Support Center portal for one stop, secure access to product and HP support information specific to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. <a href="http://www.hp.com/go/insightonline">www.hp.com/go/insightonline</a>
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<b>Security</b>	Power-on password Keyboard password Diskette drive control enable/disable Diskette boot control enable/disable External USB port enable/disable Network Server Mode Serial interface control Administrator's password Removable optical drive
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### Standard Features

#### Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**NOTE:** Server Warranty includes 3-Year Parts, 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 an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance 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>

#### Solutions

Designed for enterprise customers running compute- or I/O intensive database and transaction applications, as well as data centers using virtualization and consolidation to reduce server sprawl, the rack optimized 4-processor HP ProLiant DL585 G7 server delivers maximum performance and high availability for highly complex, business critical applications. Specifically, the HP ProLiant DL585 G7 would be excellent for running the following types of applications:

##### Typical Usage:

- x86 virtualization and consolidation projects
- Electronic Design Automation (EDA)/Semiconductor
- Financial
- Large database applications
- ERP / CRM
- Petrochemical
- Life Science and Material Science
- Video Rendering

### Optional Features

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

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: <http://www.hp.com/go/factory-express>.

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#### **HP Simple Configurator**

SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. <http://www.hp.com/products/configurator>

### Service and Support

#### Service and Support

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

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

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

HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs.

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

#### 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 SIM (Systems Insight Manager)**

Provides for installation and configuration of the latest version of HP Systems Insight Manager, together with the installation and startup of HP Service Essentials Remote Support Pack  
<http://h20195.www2.hp.com/v2/GetPDF.aspx/5982-4143EN.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 SIM (Systems Insight Manager)**

Provides for installation and configuration of the latest version of HP Systems Insight Manager, together with the installation and startup of HP Service Essentials Remote Support Pack

<http://h20195.www2.hp.com/v2/GetPDF.aspx/5982-4143EN.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/5981-6645EEEE.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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### Service and Support

**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.

**NOTE:** SmartStart version 8.70B or greater required by 6200 series processors. Latest version can be downloaded from the web at <http://www.hp.com/go/foundation>.

### Performance Models

<b>HP ProLiant DL585 G7 6386SE 4P 128GB-R Hot Plug SFF 1200W PS Server 704160-xx1</b>	<b>Processors</b>	(4) AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) Processors
	<b>Cache Memory</b>	16MB L3 cache
	<b>Memory</b>	128GB (16x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331i-SPI Adapter
	<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
	<b>Hard Drives</b>	None ship standard
	<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
	<b>Optical Drive</b>	None ship standard
	<b>Power Supply</b>	Four 1200W Platinum Power Supplies standard
	<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
	<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
	<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	<b>Form Factor</b>	4U Rack
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

<b>HP ProLiant DL585 G7 6380 4P 128GB-R Hot Plug SFF 1200W PS Server 704159-xx1</b>	<b>Processors</b>	(4) AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) Processors
	<b>Cache Memory</b>	16MB L3 cache
	<b>Memory</b>	128GB (16x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331i-SPI Adapter
	<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
	<b>Hard Drives</b>	None ship standard
	<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
	<b>Optical Drive</b>	None ship standard
	<b>Power Supply</b>	Four 1200W Platinum Power Supplies standard
	<b>Fans</b>	4 Hot plug, redundant fans (individually removable)

### Pre-configured Models

<b>Integrated Lights Out Insight Control</b>	Integrated Lights-Out 3 (iLO 3) ships standard HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

<b>HP ProLiant DL585 G7 6376 4P 64GB-R Hot Plug SFF 1200W PS Server 708687-xx1</b>	<b>Processors</b>	(4) AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) Processors
	<b>Cache Memory</b>	16MB L3 cache
	<b>Memory</b>	64GB (8x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
	<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331i-SPI Adapter
	<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
	<b>Hard Drives</b>	None ship standard
	<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
	<b>Optical Drive</b>	None ship standard
	<b>Power Supply</b>	Four 1200W Platinum Power Supplies standard
	<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
	<b>Integrated Lights Out Insight Control</b>	Integrated Lights-Out 3 (iLO 3) ships standard HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Update
	<b>Form Factor</b>	4U Rack
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

<b>HP ProLiant DL585 G7 6282SE 4P 128GB-R Hot Plug SFF 1200W PS Server 653745-xx1</b>	<b>Processors</b>	(4) AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) Processors
	<b>Cache Memory</b>	16MB L3 cache
	<b>Memory</b>	128GB (16x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
	<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
	<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
	<b>Hard Drives</b>	None ship standard
	<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
	<b>Optical Drive</b>	None ship standard
	<b>Power Supply</b>	Four 1200W Platinum Power Supplies standard
	<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
	<b>Integrated Lights Out Insight Control</b>	Integrated Lights-Out 3 (iLO 3) ships standard HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	<b>Form Factor</b>	4U Rack

### Pre-configured Models

#### Warranty

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

**HP ProLiant DL585 G7  
6276 4P 128GB-R Hot Plug  
SFF 1200W PS Server  
653746-xx1**

#### Processors

(4) AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W) Processors

#### Cache Memory

16MB L3 cache

#### Memory

128GB (16x8GB) of PC3-10600R (DDR3-1333)

**NOTE:** 48 DIMM slots.

#### Network Controller

HP NC375i Integrated Quad Port Gigabit Server Adapter

#### Storage Controller

Embedded HP Smart Array P410i/1G FBWC Controller

#### Hard Drives

None ship standard

#### Internal Storage

Up to 8TB of internal storage (SFF SAS)

#### Optical Drive

None ship standard

#### Power Supply

Four 1200W Platinum Power Supplies standard

#### Fans

4 Hot plug, redundant fans (individually removable)

#### Integrated Lights Out

Integrated Lights-Out 3 (iLO 3) ships standard

#### Insight Control

HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates

#### Form Factor

4U Rack

#### Warranty

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

**HP ProLiant DL585 G7  
6272 4P 64GB-R Hot Plug  
SFF 1200W PS Server  
653747-xx1**

#### Processors

(4) AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W) Processors

#### Cache Memory

16MB L3 cache

#### Memory

64GB (8x8GB) of PC3-10600R (DDR3-1333)

**NOTE:** 48 DIMM slots.

#### Network Controller

HP NC375i Integrated Quad Port Gigabit Server Adapter

#### Storage Controller

Embedded HP Smart Array P410i/1G FBWC Controller

#### Hard Drives

None ship standard

#### Internal Storage

Up to 8TB of internal storage (SFF SAS)

#### Optical Drive

None ship standard

#### Power Supply

Four 1200W Platinum Power Supplies standard

#### Fans

4 Hot plug, redundant fans (individually removable)

#### Integrated Lights Out

Integrated Lights-Out 3 (iLO 3) ships standard

#### Insight Control

HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates

#### Form Factor

4U Rack

#### Warranty

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

**HP ProLiant DL585 G7**

#### Processors

(4) AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/105W) Processors



### Pre-configured Models

**6180SE 4P 64GB-R**  
**P410i/1GB FBWC 8 SFF**  
**1200W RPS IC Server**  
 633964-xx1

<b>Cache Memory</b>	12MB (1 x 12MB) L3 cache
<b>Memory</b>	64GB (16x4GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i, 1G FBWC Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Four 1200W Platinum Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

**HP ProLiant DL585 G7**  
**6176SE 4P 64GB-R**  
**P410i/1GB FBWC 8 SFF**  
**1200W RPS Perf IC Svr**  
 601361-xx1

<b>Processors</b>	(4) AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/105W) Processors
<b>Cache Memory</b>	12MB (1 x 12MB) L3 cache
<b>Memory</b>	64GB (16x4GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Four 1200W Silver Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

**HP ProLiant DL585 G7**  
**6174 4P 64GB-R**  
**P410i/1GB FBWC 8 SFF**  
**1200W RPS Perf IC Svr**  
 601362-xx1

<b>Processors</b>	(4) AMD Opteron™ 6174 (2.2GHz/12-core/12MB/80W) Processors
<b>Cache Memory</b>	12MB (1 x 12MB) L3 cache
<b>Memory</b>	64GB (16x4GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter



### Pre-configured Models

<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Four 1200W Silver Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

**HP ProLiant DL585 G7  
6172 4P 32GB-R  
P410i/1GB FBWC 8 SFF  
1200W RPS Perf IC Svr  
583108-xx1**

<b>Processors</b>	(4) AMD Opteron™ 6172 (2.1GHz/12-core/12MB/80W) Processors
<b>Cache Memory</b>	12MB (1 x 12MB) L3 cache
<b>Memory</b>	32GB (8x4GB) of PC3-10600R (DDR3-1333) <b>NOTE: 48 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i/1G FBWC Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Four 1200W Silver Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Insight Control</b>	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

### Base Models

**HP ProLiant DL585 G7  
6344 2P 32GB-R Hot Plug  
SFF 1200W PS Server  
708686-xx1**

<b>Processors</b>	(2) AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) Processors
<b>Cache Memory</b>	16MB L3 cache
<b>Memory</b>	32GB (4x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 24 DIMM slots.</b>
<b>Network Controller</b>	HP Ethernet 1Gb 4-port 331i-SPI Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i Zero Memory Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)

### Pre-configured Models

<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Two 1200W Platinum Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

#### HP ProLiant DL585 G7 6238 2P 32GB-R Hot Plug SFF 1200W PS Server 653748-xx1

<b>Processors</b>	(2) AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) Processors
<b>Cache Memory</b>	16MB L3 cache
<b>Memory</b>	32GB (4x8GB) of PC3-10600R (DDR3-1333) <b>NOTE: 24 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i Zero Memory Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Two 1200W Platinum Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

#### HP ProLiant DL585 G7 6168 2P 32GB-R P410i/512 FBWC 8 SFF 1200W RPS Base Server 583105-xx1

<b>Processors</b>	(2) AMD Opteron™ 6168 (1.9GHz/12-core/12MB/80W) Processors
<b>Cache Memory</b>	12MB (1 x 12MB) L3 cache
<b>Memory</b>	32GB (8x4GB) of PC3-10600R (DDR3-1333) <b>NOTE: 24 DIMM slots.</b>
<b>Network Controller</b>	HP NC375i Integrated Quad Port Gigabit Server Adapter
<b>Storage Controller</b>	Embedded HP Smart Array P410i/512MB FBWC Controller
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	Up to 8TB of internal storage (SFF SAS)
<b>Optical Drive</b>	None ship standard
<b>Power Supply</b>	Two 1200W Silver Power Supplies standard
<b>Fans</b>	4 Hot plug, redundant fans (individually removable)
<b>Integrated Lights Out</b>	Integrated Lights-Out 3 (iLO 3) ships standard
<b>Form Factor</b>	4U Rack
<b>Warranty</b>	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	AP
	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

<b>HP Models</b>	HP ProLiant DL585 G7 BC NIC Configure-to-order Server	704963-B21
	<b>Factory Integrated Models ship with:</b>	
	HP Ethernet 1Gb 4-port 331i-SPI Adapter	
	Five standard PCI-express slots	
	HP Smart Array P410i/ Zero Memory Controller	
	Four redundant hot-plug fans	
	SFF SAS/SATA/SSD drive cage	
	HP Integrated Lights-Out 3 (iLO 3)	
	Rack (4U), 7-inch	
	<b>NOTE:</b> Power supplies need to be selected separately from Step 2 below.	
	HP ProLiant DL585 G7 Configure-to-order Server	590480-B21
	<b>Factory Integrated Models ship with:</b>	
	HP NC375i Integrated Quad Port Gigabit Server Adapter	
	Five standard PCI-express slots	
	HP Smart Array P410i/ Zero Memory Controller	
	Four redundant hot-plug fans	
	SFF SAS/SATA/SSD drive cage	
	HP Integrated Lights-Out 3 (iLO 3) management processor: integrated on system board	
	Rack (4U), 7-inch	
	<b>NOTE:</b> Power supplies need to be selected separately from Step 2 below.	

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

<b>HP Processors</b>	<b>NOTE:</b> If more than two processors are desired, select xxxxxx-L21 and additional processors would be xxxxxx-B21. 3P configurations are not supported	
	<b>Sixteen-Core Processors</b>	
	HP DL585 G7 AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) FIO 2-processor Kit	704173-L21
	HP DL585 G7 AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) FIO 2-processor Kit	704175-L21
	HP DL585 G7 AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W) FIO 2-processor Kit	704177-L21
	HP DL585 G7 AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) FIO 2-processor Kit	704179-L21
	HP DL585 G7 AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) FIO 2-processor Kit	704183-L21
	HP DL585 G7 AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) FIO 2-processor Kit	689340-L21
	HP DL585 G7 AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) FIO 2-processor Kit	689342-L21
	HP DL585 G7 AMD Opteron™ 6282SE (2.60GHz/16-core/16MB/140W) FIO 2-processor Kit	653976-L21
	HP DL585 G7 AMD Opteron™ 6276 (2.30GHz/16-core/16MB/115W) FIO 2-processor Kit	653978-L21
	HP DL585 G7 AMD Opteron™ 6274 (2.20GHz/16-core/16MB/115W) FIO 2-processor Kit	655514-L21



### Configuration Information - Factory Integrated Models

HP DL585 G7 AMD Opteron™ 6272 (2.10GHz/16-core/16MB/115W) FIO 2-processor Kit	653980-L21
HP DL585 G7 AMD Opteron™ 6262HE (1.60GHz/16-core/16MB/85W) FIO 2-processor Kit	655522-L21

#### Twelve-Core Processors

HP DL585 G7 AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) FIO 2-processor Kit	704185-L21
HP DL585 G7 AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) FIO 2-processor Kit	704187-L21
HP DL585 G7 AMD Opteron™ 6238 (2.60GHz/12-core/16MB/115W) FIO 2-processor Kit	653982-L21
HP DL585 G7 AMD Opteron™ 6234 (2.40GHz/12-core/16MB/115W) FIO 2-processor Kit	655518-L21

#### Eight-Core processors

HP DL585 G7 AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) FIO 2-processor Kit	704191-L21
HP DL585 G7 AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) FIO 2-processor Kit	704193-L21
HP DL585 G7 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) FIO 2-processor Kit	655520-L21
HP DL585 G7 AMD Opteron™ 6212 (2.60GHz/8-core/16MB/115W) FIO 2-processor Kit	655516-L21

#### Quad-Core processor

HP DL585 G7 AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) FIO 2-processor Kit	704195-L21
HP DL585 G7 AMD Opteron™ 6204 (3.30GHz/4-core/16MB/115W) FIO 2-processor Kit	671816-L21

#### HP Memory

**NOTE:** HP Memory selection requires a minimum quantity 2.

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676331-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676333-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	684066-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

#### Load Reduced DIMMs(LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21
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#### HP Power Supplies

HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21

**NOTE:** Option Kit contains optional power supply, an IEC power cable and PDU IEC cables.

Configuration Information - Factory Integrated Models

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

HP Storage Controllers	HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller	491191-B21
	HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller	491193-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21

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. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

<b>HP Unique Options</b>	HP DL585 G7 PCI-E Riser v2 Option Kit	659805-B21
	<b>NOTE:</b> Adds 2 PCI-E 2.0 x16, 4 PCI-E 2.0 x8.	
	<b>NOTE:</b> v2 recommended for AMD Opteron 6200 processor configurations.	
	HP DL585 G7 PCI-E/X Riser v2 Option Kit	659807-B21
	<b>NOTE:</b> Adds 1 PCI-E 2.0 x16, 2 PCI-E 2.0 x8, 1 PCI-E 2.0 x4, 2 PCI-X.	
	<b>NOTE:</b> v2 recommended for AMD Opteron 6200 processor configurations.	
	HP DL585 G7 CPU Memory Secondary Upgrade Option	590489-B21
	<b>NOTE:</b> Adds processor sockets 3 and 4 and associated DIMM slots.	

### HP Processors

**NOTE:** Processor kits contain two processors each.

#### Sixteen Core Processors

HP DL585 G7 AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) 2-processor Kit	704173-B21
HP DL585 G7 AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) 2-processor Kit	704175-B21
HP DL585 G7 AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W) 2-processor Kit	704177-B21
HP DL585 G7 AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) 2-processor Kit	704179-B21
HP DL585 G7 AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) 2-processor Kit	704183-B21
HP DL585 G7 AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) 2-processor Kit	689340-B21
HP DL585 G7 AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) 2-processor Kit	689342-B21
HP DL585 G7 AMD Opteron™ 6282SE (2.60GHz/16-core/16MB/140W) 2-processor Kit	653976-B21
HP DL585 G7 AMD Opteron™ 6276 (2.30GHz/16-core/16MB/115W) 2-processor Kit	653978-B21
HP DL585 G7 AMD Opteron™ 6274 (2.20GHz/16-core/16MB/115W) 2-processor Kit	655514-B21
HP DL585 G7 AMD Opteron™ 6272 (2.10GHz/16-core/16MB/115W) 2-processor Kit	653980-B21
HP DL585 G7 AMD Opteron™ 6262HE (1.60GHz/16-core/16MB/85W) 2-processor Kit	655522-B21

#### Twelve-Core Processors

HP DL585 G7 AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) 2-processor Kit	704185-B21
HP DL585 G7 AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) 2-processor Kit	704187-B21
HP DL585 G7 AMD Opteron™ 6238 (2.60GHz/12-core/16MB/115W) 2-processor Kit	653982-B21
HP DL585 G7 AMD Opteron™ 6234 (2.40GHz/12-core/16MB/115W) 2-processor Kit	655518-B21
HP DL585 G7 AMD Opteron™ 6180SE (2.5GHz/12-core/12MB/140W) 2-processor Kit	633965-B21
HP DL585 G7 AMD Opteron™ 6176SE (2.3GHz/12-core/12MB/140W) 2-processor Kit	601351-B21
HP DL585 G7 AMD Opteron™ 6176 (2.3GHz/12-core/12MB/115W) 2-processor Kit	633967-B21
HP DL585 G7 AMD Opteron™ 6174 (2.2GHz/12-core/12MB/115W) 2-processor Kit	601353-B21
HP DL585 G7 AMD Opteron™ 6172 (2.1GHz/12-core/12MB/115W) 2-processor Kit	583109-B21
HP DL585 G7 AMD Opteron™ 6168 (1.9GHz/12-core/12MB/115W) 2-processor Kit	583106-B21
HP DL585 G7 AMD Opteron™ 6166HE (1.8GHz/12-core/12MB/85W) 2-processor Kit	633971-B21
HP DL585 G7 AMD Opteron™ 6164HE (1.7GHz/12-core/12MB/85W) 2-processor Kit	601357-B21

#### Eight-Core Processors

HP DL585 G7 AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) 2-processor Kit	704191-B21
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### Core Options

HP DL585 G7 AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) 2-processor Kit	704193-B21
HP DL585 G7 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) 2-processor Kit	655520-B21
HP DL585 G7 AMD Opteron™ 6212 (2.60GHz/8-core/16MB/115W) 2-processor Kit	655516-B21
HP DL585 G7 AMD Opteron™ 6140 (2.6GHz/8-core/12MB/115W) 2-processor Kit	633969-B21
HP DL585 G7 AMD Opteron™ 6136 (2.4GHz/8-core/12MB/115W) 2-processor Kit	601355-B21
HP DL585 G7 AMD Opteron™ 6128 (2.0GHz/8-core/12MB/115W) 2-processor Kit	583103-B21
HP DL585 G7 AMD Opteron™ 6132HE (2.2GHz/8-core/12MB/85W) 2-processor Kit	633973-B21
<b>Quad-Core processor</b>	
HP DL585 G7 AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) 2-processor Kit	704195-B21
HP DL585 G7 AMD Opteron™ 6204 (3.30GHz/4-core/16MB/115W) 2-processor Kit	671816-B21

### HP Memory

**NOTE:** DIMM banks are active only when the corresponding processor socket is populated.

**NOTE:** Memory must be installed in like-pairs, i.e. two of the same size.

#### Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676331-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676333-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	684066-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

#### Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21
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#### Upgrade Options

HP DL585 G7 CPU Memory Secondary Upgrade Option	590489-B21
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**NOTE:** Adds processor sockets 3 and 4 and associated DIMM slots.

### Core Options

#### HP Optical Drives

**NOTE:** Optical drives are ejectable.

HP Slim 12.7mm SATA DVD-ROM Optical Drive

481041-B21

HP Slim 12.7mm SATA DVD-RW Optical Drive

481043-B21

#### HP Hard Drives

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

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

##### 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

**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)

##### 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

##### 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

**NOTE:** SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

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

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

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

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

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

### Core Options

HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive 632494-B21

HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive 632492-B21

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

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

### 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

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

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

HP Ethernet 1Gb 2-port 332T Adapter 615732-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 NC523SFP 10Gb 2-port Server Adapter 593717-B21

HP NC524SFP Dual Port 10GbE Module 489892-B21

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

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

HP NC550SFP Dual Port 10GbE Server Adapter 581201-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 DDR PCI-E 0 Memory Dual Port HCA 483513-B21

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

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

HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter 649281-B21

Core Options

HP I/O Expansion Options	HP DL585 G7 PCI-E Riser Card	590485-B21
	HP DL585 G7 PCI-E Riser v2 Option Kit	659805-B21
	<b>NOTE:</b> Adds 2 PCI-E 2.0 x16, 4 PCI-E 2.0 x8.	
	<b>NOTE:</b> v2 recommended for AMD Opteron 6200 processor configurations.	
	HP DL585 G7 PCI-E/X Riser v2 Option Kit	659807-B21
	<b>NOTE:</b> Adds 1 PCI-E 2.0 x16, 2 PCI-E 2.0 x8, 1 PCI-E 2.0 x4, 2 PCI-X.	
	<b>NOTE:</b> v2 recommended for AMD Opteron 6200 processor configurations.	

HP Power Supplies	<b>NOTE:</b> 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: <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> .	
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
	<b>NOTE:</b> Option Kits contains optional power supply, an IEC power cable and PDU IEC cables.	



### Additional Options

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

#### HP Insight Software

#### HP Insight Control

HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License 452148-B22

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 Management Media Kit 436222-B21

**NOTE:** HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

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

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

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

**NOTE:** For additional license options please see the 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 Integrated Lights-Out (iLO) Advanced for ProLiant Remote Management

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

HP iLO Advanced Pack Electronic License with 3yr 24x7 Tech Support and Updates BD506AAE

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

HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates BD505A

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Flexible Quantity License 512486-B21

HP iLO Advanced Flexible Qty License with 3yr 24x7 Tech Support and Updates BD506A

HP iLO Advanced including 1yr 24x7 Technical Support and Updates Tracking License 512487-B21

HP iLO Advanced Tracking License with 3yr 24x7 Tech Support and Updates BD507A

**NOTE:** 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.

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

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

#### HP Insight Control server deployment

HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License T9082AAE

HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License 452151-B21



### Additional Options

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

**NOTE:** Customer will receive a license entitlement certificate, which 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.

**NOTE:** For additional license kits please see the Insight Control QuickSpecs at: [http://h18004.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### High Performance Clusters

##### HP Cluster Management Utility

HP Insight Cluster Management Utility 1yr 24x7 Flexible License

QL803B

HP Insight Cluster Management Utility 3yr 24x7 Flexible License

BD476A

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

HP Insight Cluster Management Utility Media

BD477A

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

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

##### HP HPC Linux Value Pack

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

TC293B

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

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

TC294A

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

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

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

#### HP Graphics Options

HP DL580/DL585/DL980 G7 Power Cable Kit

631660-B21

**NOTE:** The HP ProLiant DL585 G7 can support up to 4 (225W) or 3 (300W) Graphic Cards and/or GPGPU Accelerator Options.

**NOTE:** An option kit will be required per Graphic Card and/or GPGPU Accelerator Options.

**NOTE:** Depending on the number of GPGPUs required, customers will need to purchase one of the following I/O expansion boards: HP DL585G7 PCI-E Riser v2 Option Kit PN: 659805-B21 (Adds 2 PCI-E 2.0 x16, 4 PCI-E 2.0 x8. OR the HP DL585G7 PCI-E/X Riser v2 Option Kit: PN: 659807-B21 (Adds 1 PCI-E 2.0 x16, 2 PCI-E 2.0 x8, 1 PCI-E 2.0 x4, 2 PCI-X).

### Additional Options

#### HP I/O Accelerator Options

##### Second Generation Accelerators

HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21

##### First Generation Accelerators

HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers	600278-B21
<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 ioDrive Duo for ProLiant Servers	641027-B21

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

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

#### HP Security

HP Trusted Platform Module Option	488069-B21
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**NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: [www.hp.com/go/TPM](http://www.hp.com/go/TPM).

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

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

#### HP Storage Controllers

##### SAS Controllers

##### Smart Array P212 Controller

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

##### Smart Array P410 Controller

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

##### Smart Array P411 Controller



### Additional Options

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

#### Smart Array P812 Controller

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

HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21
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**NOTE:** Supported on HP Smart Array P411 Controller only.

HP 512MB Flash Backed Write Cache	534916-B21
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HP 256MB P-series Cache Upgrade	462968-B21
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HP 1GB Flash Backed Cache	534562-B21
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HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License	516471-B21
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**NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.

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

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

[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 HBA

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

#### SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
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**NOTE:** Recommended HBA for SCSI tape drive connect.

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

[http://h18000.www1.hp.com/products/quickspecs/12566\\_div/12566\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html)  
(SC11Xe HBA)

### Additional Options

**NOTE:** Please refer to the HBA QuickSpecs for additional information at:  
<http://www.hp.com/products/hba>.

#### 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>.

**NOTE:** Connection using HP Smart Array P212/Zero Memory Controller (PN 462828-B21) recommended.

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.	
HP LTO-5 Ultrium 3280 SAS Internal Tape Drive	EH899B
<b>NOTE:</b> For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server.	
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.	
HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A
HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library	BL537A
HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
HP MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library	BL538A
HP MSL8096 2 LTO-4 Ultrium 1760 SAS Tape Library	AK382A
HP MSL8096 2 LTO-5 Ultrium 3000 SAS Tape Library	BL539A
HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	COL99A
HP StoreEver LTO-6 Ultrium 6650 Internal Tape Drive	EH963A
HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
HP StoreEver LTO-6 Ultrium 6250 Internal Tape Drive	EH969A
HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A

#### HP Disk Backup

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

##### HP D2D Backup Systems with Backup Data Deduplication

HP D2D2504i Backup System	EJ002C
HP D2D4112 Backup System	EH993C

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

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server.

HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
HP RDX500 USB3.0 Internal Disk Backup System	B7B64A

##### HP StoreOnce Backup systems

HP StoreOnce 2620 iSCSI Backup	BB852A
HP StoreOnce 4220 Backup	BB855A

### Additional Options

#### HP Storage Options

##### Storage Fibre Channel HBA

**NOTE:** The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see:  
<http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

##### Brocade Fibre Channel HBAs

HP 41B 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP767B
HP 42B 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP768B
HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B

##### Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP FC2142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	A8002B
HP FC2242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	A8003B
HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A

**NOTE:** If selected, this card should not be populated in slots 1, 4, 7 or 11; a max of 7 cards can be installed.

HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A
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**NOTE:** If selected, this card should not be populated in slots 1, 4, 7 or 11; a max of 7 cards can be installed.

HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A

##### QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP FC1142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AE311A
HP FC1242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AE312A

##### Converged Network Adapter

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

#### HP Disk Storage Systems Disk Enclosures

HP D2600 Disk Enclosure	AJ940A
HP D2700 Disk Enclosure	AJ941A

**NOTE:** Please see the QuickSpecs for additional options and configuration information at: [http://h18000.www1.hp.com/products/quickspecs/13404\\_div/13404\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html) (Worldwide)

#### HP Uninterruptible

#### HP Rack-mountable UPS



### Additional Options

#### Power Systems

##### 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)

##### 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

HP R5KVA and R7KVA 3U Extended Runtime Module AF464A

**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)

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

HP R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System AF432A

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

HP R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System AF430A

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

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

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

### Additional Options

#### HP 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 16.6kVA 40A Dual Input Single Phase NA/JP Monitored Power Distribution Unit	AF505A
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

##### 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.

HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit	252663-D71
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**NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: [www.hp.com/products/powercords](http://www.hp.com/products/powercords).

**NOTE:** Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: [www.hp.com/go/rackandpower](http://www.hp.com/go/rackandpower)

#### 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 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
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
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 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A



### Additional Options

HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A
<b>iPDU Extension Bars</b>	
HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
<b>NOTE:</b> Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: <a href="http://www.hp.com/go/rackandpower">www.hp.com/go/rackandpower</a>	

### HP Rack Options

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

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

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

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

#### HP 1U Rackmount Keyboard with USB

HP 1U US Rackmount Keyboard with USB	AG072A
HP 1U UK Rackmount Keyboard with USB	AG073A
HP 1U DE Rackmount Keyboard with USB	AG074A
HP 1U FR Rackmount Keyboard with USB	AG075A

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

[http://h18000.www1.hp.com/products/quickspecs/12465\\_div/12465\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12465_div/12465_div.html)  
(Worldwide)

#### HP USB Keyboard and Mouse

HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373





### Additional Options

HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

**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
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

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

[http://h18000.www1.hp.com/products/quickspecs/11834\\_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
HP KVM CAT5 1-pack USB Interface Adapter	336047-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13475\\_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 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

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

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

### Additional Options

<b>HP USB and SD Options</b>	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB 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

**NOTE:** 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 [HP VMware Getting Started Guide](#) for installation instructions.

<b>HP Care Pack Services</b>	<b>Hardware Services On-site Service</b>	
	HP 3 year 4 hour 13x5 ProLiant DL58x Hardware Support	U4607E
	HP 3 year 4 hour 24x7 ProLiant D58x Hardware Support	U4608E
	<b>6-Hour Call to Repair, On-site Service 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number)</b>	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL58x Hardware Support	U4609E
	<b>Installation &amp; Start-up Services</b>	
	HP Install ProLiant DL58x Service	U4617E
	HP Startup ProLiant DL58x Service	U4618E
	HP Installation and Startup for Insight Control Server Deployment - previously Rapid Deployment Pack	U5683E
	<b>Support Plus 24</b>	
	HP 3 year Support Plus 24 Microsoft ProLiant DL58x Service	U4620E
	HP 3 year Support Plus 24 SuSE ProLiant DL58x Service	U6316E

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

### Memory

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

#### HP ProLiant DL585 G7 Models Memory Configurations

- This server supports DDR3 2GB, 4GB, 8GB, 16GB and 32GB memory modules across 48 memory sockets.
- 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)

#### Advanced ECC memory

- Advanced ECC memory is the memory protection mode for this server. In Advanced ECC, the server does not fail because of correctable memory errors. The server provides notification if the level of correctable errors exceeds a pre-defined threshold rate.
- Advanced ECC provides additional protection over standard ECC because it is possible to correct certain memory errors that would otherwise be uncorrectable and result in a server failure.
- Whereas standard ECC can correct single-bit memory errors, Advanced ECC can correct single-bit memory errors and multi-bit memory errors if all failed bits are on the same DRAM device on the memory module.

#### Online Spare memory

- Online Spare memory mode is a higher level of memory protection that complements Standard Memory mode with Advanced ECC. With Online Spare mode, a DIMM with a rank of memory at least as large as the other ranks in the system, or memory board, is designated as the Online Spare rank. If one of the other DIMMs exceeds a threshold rate of correctable memory errors, the affected rank of memory within that DIMM is taken offline and the data is copied to the Online Spare rank. This capability maintains server availability and memory reliability without service intervention or server interruption. The DIMM that exceeded the error threshold can be replaced at the customer's convenience during a scheduled shutdown. Online Spare reduces the chance of an uncorrectable error bringing down the system; however, it does not fully protect the system against uncorrectable memory errors.
- Online Spare mode is beneficial to businesses with sites that do not have IT staff available to service a failure, do not always have replacement memory readily available, or cannot bring down the server until a scheduled shutdown. The cost of implementation for Online Spare over Advanced ECC is the hardware cost of the extra DIMMs for the spare memory bank.
- The user configures the system for Online Spare mode through the RBSU. Online Spare configuration requirements vary for each server series, but it does not require operating system support or special software beyond the System BIOS. However, if messaging and logging are desired at the console along with messages in HP Systems Insight Manager, an operating system must be used that has system management and agent support for Advanced Memory Protection.

#### Population order

- The two tables below represent the memory module population order for one processor. The population order for the other processors is identical. SR denotes Single Rank, DR denotes Dual Rank, and QR denotes Quad Rank.
- All memory modules must follow the population order shown in these two tables for all the processors with the following exception:
- QR memory modules must be installed only in memory sockets 2, 5, 8, and 11, while following the population order for those memory sockets.

### Memory

Processor memory socket	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	<b>A</b>	<b>I</b>	<b>E</b>	<b>C</b>	<b>K</b>	<b>G</b>
Processor memory channel	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>B</b>	<b>B</b>

Processor memory socket	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
Rank support per memory socket	SR/DR	SR/DR/QR	SR/DR	SR/DR	SR/DR/QR	SR/DR
Population order	<b>B</b>	<b>J</b>	<b>F</b>	<b>D</b>	<b>L</b>	<b>H</b>
Processor memory channel	<b>C</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>D</b>	<b>D</b>

### Population rules

- When installing memory modules, observe the following population rules:
- Use only HP memory modules listed in this document.
- Advanced ECC is not available if x4 and x8 memory modules are mixed in channels (A and B), (C and D), or both, but standard ECC is still available. Advanced ECC is available if x4 and x8 memory modules are mixed in memory channels (A and C), (B and D), or both.

While adhering to the memory population rules ("Population rules" - see above), performance can be improved by following the guidelines below:

- Memory modules may be installed one at a time per processor, but installing two at a time per processor provides for additional performance, installing four at a time per processor provides for better performance, and installing equal amounts of memory for all processors provides for best performance.
- Install all memory modules of the same speed on the same processor for best performance.
- Install all memory modules of the same voltage on the same processor for best power.

Advanced Memory Protection (AMP) mode Online Spare Memory has further requirements beyond these listed above. Please refer to the user guide for additional memory configuration requirements

### Memory bus speed

Depending on the quantity and native speed of memory modules installed, memory bus speeds can be 1333 MHz, 1066 MHz, 800 MHz, or 667 MHz. Memory bus speeds can be different for each processor.

To determine memory bus speeds, do the following:

Within RBSU, select the Power Management Options menu > Advanced Power Management Options menu > Maximum Memory Bus Frequency menu.

### Memory

Memory modules per channel	QR	SR or DR	Memory module native speed	Memory bus speed (standard-voltage memory module)	Memory bus speed (low-voltage memory module)
1	-	1	SR 1600 MHz <sup>3</sup> DR 1600 MHz <sup>3</sup>	1600 MHz	NA
1		1	SR 1333 MHz DR 1333 MHz	1333 MHz <sup>1</sup>	1066 MHz <sup>1</sup>
1	1	-	QR 1066 MHz	1066 MHz <sup>1</sup>	1066 MHz <sup>1</sup>
2	-	2	SR 1333 MHz DR 1333 MHz SR 1600 MHz <sup>3</sup> DR 1600 MHz <sup>3</sup>	1333 MHz <sup>1,2</sup>	1066 MHz <sup>1,2</sup>
2	1	1	SR 1333 MHz DR 1333 MHz QR 1066 MHz	800 MHz	800 MHz
3	-	3 SR	SR 1333 MHz SR 1600 MHz <sup>3</sup>	1066 MHz	1066 MHz
3	-	3 DR	DR 1333 MHz DR 1600 MHz <sup>3</sup>	1066 MHz	800 MHz
3	-	3 mixed	SR 1333 MHz DR 1333 MHz SR 1600 MHz <sup>3</sup> DR 1600 MHz <sup>3</sup>	1066 MHz	800 MHz
3	1	2	SR 1333 MHz DR 1333 MHz QR 1066 MHz	800 MHz	667 MHz

<sup>1</sup>Max. Actual result of lowest DIMM speed

<sup>2</sup>When 1333MHz selected in BIOS "memory speed with 2DPC" entry

<sup>3</sup>1600 MHz memory is only supported in conjunction with Opteron 6200 series processors.

Select one of the following menu options:

- Auto (default) - The memory bus speed is set to what is shown in the following table. If the native speed of the installed memory module is slower than the memory bus speed, the memory bus speed is set to the memory module native speed
- 800 MHz-The memory bus speed is set to 800 MHz regardless of the quantity of memory modules installed, unless the table above reflects a slower memory bus speed.

**NOTE:** There may be more than one memory bus speed menu option.

**NOTE:** LVDIMMs support on 2011.08.04 BIOS

### Memory

#### Memory Installation Example

These memory installation example shows the memory sockets associated with the first processor only. This can be applied toward the memory sockets associated with the other processor also.

#### 4 RDIMMs per processor

- Standard memory: 4x4GB RDIMMs (16GB per processor)
- Optional memory: Adding 8x8GB RDIMMs to standard memory (80GB per processor)
- Maximum memory: Replacing standard memory with 4x16GB QR RDIMMs and 8x8GB DR RDIMMs (maximum of 128GB per processor)

Processor memory socket	1	2	3	4	5	6
Standard Memory	4GB			4GB		
Optional Memory	4GB	8GB	8GB	4GB	8GB	8GB
Maximum Memory	16GB	32GB	16GB	16GB	32GB	16GB

Processor memory socket	7	8	9	10	11	12
Standard Memory	4GB			4GB		
Optional Memory	4GB	8GB	8GB	4GB	8GB	8GB
Maximum Memory	16GB	32GB	16GB	16GB	32GB	16GB

**NOTE:** 1TB capacity is achieved by loading 1 32GB in center socket and remaining sockets with 16GB DIMMs on every memory channel on all processors.

The following memory options are available from HP:

#### Memory

**NOTE:** DIMM banks are active only when the corresponding processor socket is populated.

#### Registered DIMMs (RDIMMs)

HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593907-B21
HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593911-B21
HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604500-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676331-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800 (DDR3-1600) Registered CAS-11 Memory Kit	676333-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593913-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604502-B21
HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	593915-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627808-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	684066-B21
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627810-B21

#### Load Reduced DIMMs(LRDIMMs)



Memory

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit 647885-B21

**NOTE:** Memory must be installed in like-pairs, i.e. two of the same size.

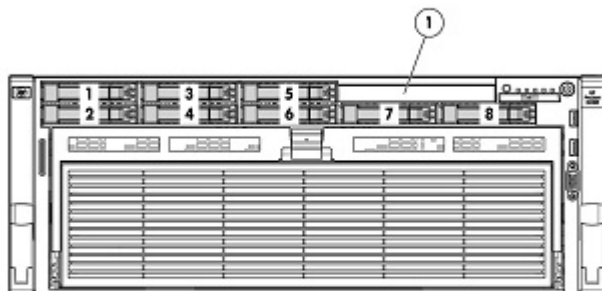
**Upgrade Options**

HP DL585 G7 CPU Memory Secondary Upgrade Option 590489-B21

**NOTE:** Adds processor sockets 3 and 4 and associated DIMM slots.

### Storage

1-8 Eight SFF SAS hot plug hard drive bays



### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Removable Media</b>			
Slimline DVD-ROM drive	Up to 1	1	Integrated SATA
HP Slim SATA DVD RW Optical Drive	Up to 1	1	Integrated SATA

#### 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 P212/Zero Memory Controller
600GB 6G SAS 10K			HP Smart Array P212/256 MB Controller
450GB 6G SAS 10K			HP Smart Array P410/256 MB Controller
300GB 6G SAS 10K			HP Smart Array P410/512 MB BBWC Controller
300GB 6G SAS 15K			HP Smart Array P410/Zero Memory Controller
146GB 6G SAS 15K			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller



### Storage

HP Smart Array P411/1G Flash Backed Write Cache  
 HP Smart Array P411/512MB Flash Backed Write Cache  
 HP Smart Array P812/512 BBWC 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 P212/Zero Memory Controller
500GB 6G SAS 7.2K			HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/Zero Memory Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC 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 P212/Zero Memory Controller
500GB 3G SATA 7.2K			HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/Zero Memory Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller
200GB 3.0G SATA SSD			HP Smart Array P212/256 MB Controller
100GB 3.0G SATA SSD			HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/Zero Memory Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller

### Storage

HP Smart Array P411/256 MB Controller  
 HP Smart Array P411/512 MB BBWC Controller  
 HP Smart Array P411/1G Flash Backed Write Cache  
 HP Smart Array P411/512MB Flash Backed Write Cache  
 HP Smart Array P812/512 BBWC Controller

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

	Quantity Supported	Position Supported	Controller
400GB 6G SAS SLC SFF	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller
200GB 6G SAS SLC SFF			HP Smart Array P212/256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P410/Zero Memory Controller
			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P812/512 BBWC Controller

#### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 4	External	HP Smart Array P211/256 MB Controller
	Up to 8	External	HP Smart Array P411/256MB BBWC Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/1G Flash Backed Write Cache Controller
			HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P211/256 MB Controller
	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 Write Cache Controller
			HP Smart Array P812/1G Flash Backed Cache Controller

### Storage

#### Maximum Storage Capacity - (External Enclosures Attached)

Internal	8TB (8 x 1TB SFF SAS/SATA Drives)
External	192TB (8 D2600 enclosures @ 12 drives per enclosure x 2TB SATA)
Total	200TB

#### Maximum Storage Capacity - (External Enclosures Attached)

Internal	8TB (8 x 1TB SFF SAS/SATA Drives)
External	100TB (4 D2700 enclosures @ 25 drives per enclosure x 1TB SATA)
Total	108TB

### Tape and Disk-Based 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	Controller Part Number
<b>HP SCSI Tape Drives</b>	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI 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>	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>HP USB Tape Drives</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</b>	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
DAT 160			
DAT 320			
LTO-2 Ultrium 448			
LTO-3 Ultrium 920			
LTO-4 Ultrium 1760			
LTO-4 Ultrium 1840			
LTO-5 Ultrium 3000			

### Storage

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

<b>HP SCSI Tape Autoloaders</b> DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI 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>	412911-B21
<b>HP SCSI Tape Libraries, External</b> MSL2024 MSL4048 MSL8096 MSL6000	External	<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 SAS Tape Autoloaders and Libraries</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
<b>HP Fibre Channel Tape Libraries</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
<b>HP USB RDX Removable Disk Backup System</b> RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 Port	N/A
<b>HP D2D Backup Systems, iSCSI</b> D2D2503i D2D4004i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	N/A
<b>HP D2D Backup Systems, Fibre Channel</b> D2D4000fc	External	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

### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) (with bezel)	6.94" x 19.0" x 27.55" (17.6cm x 48.3cm x 70.0cm)	
	<b>Weight</b> (approximate)	Maximum	100.0 lb (45.4 kg)
		(all hard drives, power supplies, DIMMs and processors installed)	
		Minimum	66.0 lb (30.0 kg)
		(one hard drive, two power supplies, four DIMMs and two processors installed)	
	<b>Input Requirements</b> (per power supply)	Rated Line Voltage	100 - 127 VAC, 200 - 240 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 240 VAC)
	<b>BTU Rating</b>	Maximum	3960 BTU/hr (at 100 VAC), 5450 BTU/hr (at 200 VAC)
	<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the HP Power Advisor which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a> <ul style="list-style-type: none"> <li>Click on the system of interest. Example: DL585 G7</li> <li>Follow the instructions of the next screens</li> </ul>	
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	910 W (low line), 1300 W (high line)
		Maximum Peak Power	910 W (low line), 1300 W (high line)
	<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	<b>Relative Humidity</b> (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.

### Technical Specifications

<b>Altitude</b>	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
<b>Acoustic Noise</b>	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	L WAd	6.8 B (with PCI-E)
	L pAm	NA dBA
	Operating	
	L WAd	6.8 B (with PCI-E)
<b>Emissions Classification (EMC)</b>	L pAm	NA dBA
	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	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.

<b>Integrated Lights-Out 3 (iLO 3) integrated on system board</b>	<b>Architecture</b>	PCI Express based health and remote management ASIC
	<b>Processor</b>	PCI Express RISC processor core running at 250MHz
	<b>Upgradeability</b>	Option firmware upgradeable via Flash ROM.
	<b>Interfaces</b>	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network connection (10/100Mb/s)
	<b>Memory</b>	128-MB RAM with ECC
	<b>Operating System Support</b>	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32bit and 64bit)
		Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit)
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition
		Red Hat Enterprise Linux 5 (32 bit and 64 bit)
		SUSE Linux Enterprise Server 11 (32bit and 64bit)
		SUSE Linux Enterprise Server 10 (32bit and 64bit)
		VMware ESX 4.0
		VMware ESX 3.5.0

### Technical Specifications

<b>Client System Support</b>	<p>Microsoft Windows 7</p> <p>Microsoft Windows XP Professional Edition</p> <p>Microsoft Windows Vista Business and Ultimate Editions</p> <p>Red Hat Enterprise Desktop 5.00</p> <p>SUSE Linux Enterprise Desktop 11</p> <p>SUSE Linux Enterprise Desktop 10</p>
<b>Client Browser Support</b>	<p>Microsoft Internet Explorer 8</p> <p>Microsoft Internet Explorer 7</p> <p>Microsoft Internet Explorer 6</p> <p>Firefox 3.5 (on supported Windows and Linux systems)</p> <p>Firefox 3.0 (on supported Windows and Linux systems)</p>
<b>Command Line Support</b>	<p>Secure Shell and serial port access</p> <p>Secure Socket Layer</p> <p>Secure Shell version 2</p>
<b>Security</b>	<p>Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface</p> <p>AES encryption of video</p> <p>RC4 encryption of video</p>
<b>Directory Support Services</b>	Active Directory v1.0 (Windows 2003)
<b>Driver Support</b>	HP ProLiant iLO3 Management Controller Driver Package
<b>Management protocols supported</b>	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

### Smart Array P410i Controller

<b>Dimensions</b>	Embedded
<b>Disk Drive and Enclosure Interface - Transfer rate</b>	<p>6Gb/s SAS (Serial Attached SCSI)</p> <p>3Gb/s SATA (Serial ATA)</p>
<b>SAS Connectors</b>	2 internal 4X connectors
<b>Cache Memory Speed</b>	DDR2-800MHz with 40 or 72-bit wide bus
<b>Server Interface</b>	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
<b>SAS Speed</b>	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
<b>Cache Memory</b>	<p>Zero Memory RAID has no cache memory</p> <p>40-bit 256MB ECC protected cache (battery upgrade available)</p> <p>72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC</p>
<b>Logical Drives Supported</b>	<p>Zero Memory, Up to 2 logical volumes (8 physical drives)</p> <p>Up to 64 logical drives with cache</p>
<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space
<b>RAID Support</b>	<p>RAID 6, 6+0 (Advanced Data Guarding)</p> <p><b>NOTE:</b> RAID 6, 6+0 can be enabled with one of the following combinations:</p> <ul style="list-style-type: none"> <li>256 MB cache, Battery kit and Smart Array Advanced Pack License key</li> </ul>

### Technical Specifications

- option upgrades
- 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades
- 1G FBWC and Smart Array Advanced Pack License key option upgrades

RAID 5, 5+0 (Distributed Data Guarding)

**NOTE:** 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)

<b>HP NC375i Integrated Quad Port Gigabit Server Adapter</b>	<b>Network Interface</b>	10/100/1000-T	
	<b>Compatibility</b>	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX	
	<b>Data Transfer Method</b>	PCI Express 2.0 x8	
	<b>Controller</b>	Qlogic/NetXen NX3031	
	<b>Network Transfer Rate</b>	10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Full-Duplex)	2000 Mb/s
	<b>Connector</b>	RJ-45	
	<b>Cable Support</b>	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)

<b>HP 331i Integrated Quad Port Gigabit Server Adapter</b>	<b>Network Processor</b>	Broadcom BCM5719 chipset	
	<b>Data rate</b>	Four ports, each at 2 Gbps full duplex; 8 Gbps aggregate full duplex theoretical bandwidth.	
	<b>Bus type</b>	PCIe 2.0	
	<b>Bus speed</b>	Gen 2 x4	
	<b>Connector</b>	RJ-45 (Four)	
	<b>Cable distance</b>	Up to 328 ft (100 m)	
	<b>Wiring</b>	Category 5/ (CAT-5) or better twisted-pair cabling	
	<b>IEEE Compliance</b>	802.3, 802.3ab, 802.3u, 802.3x, Dynamic 802.3ad, 802.1Q, 802.3az, 1588, 802.1as	



### Technical Specifications

**Environment-friendly  
Products and Approach****End-of-life Management  
and Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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