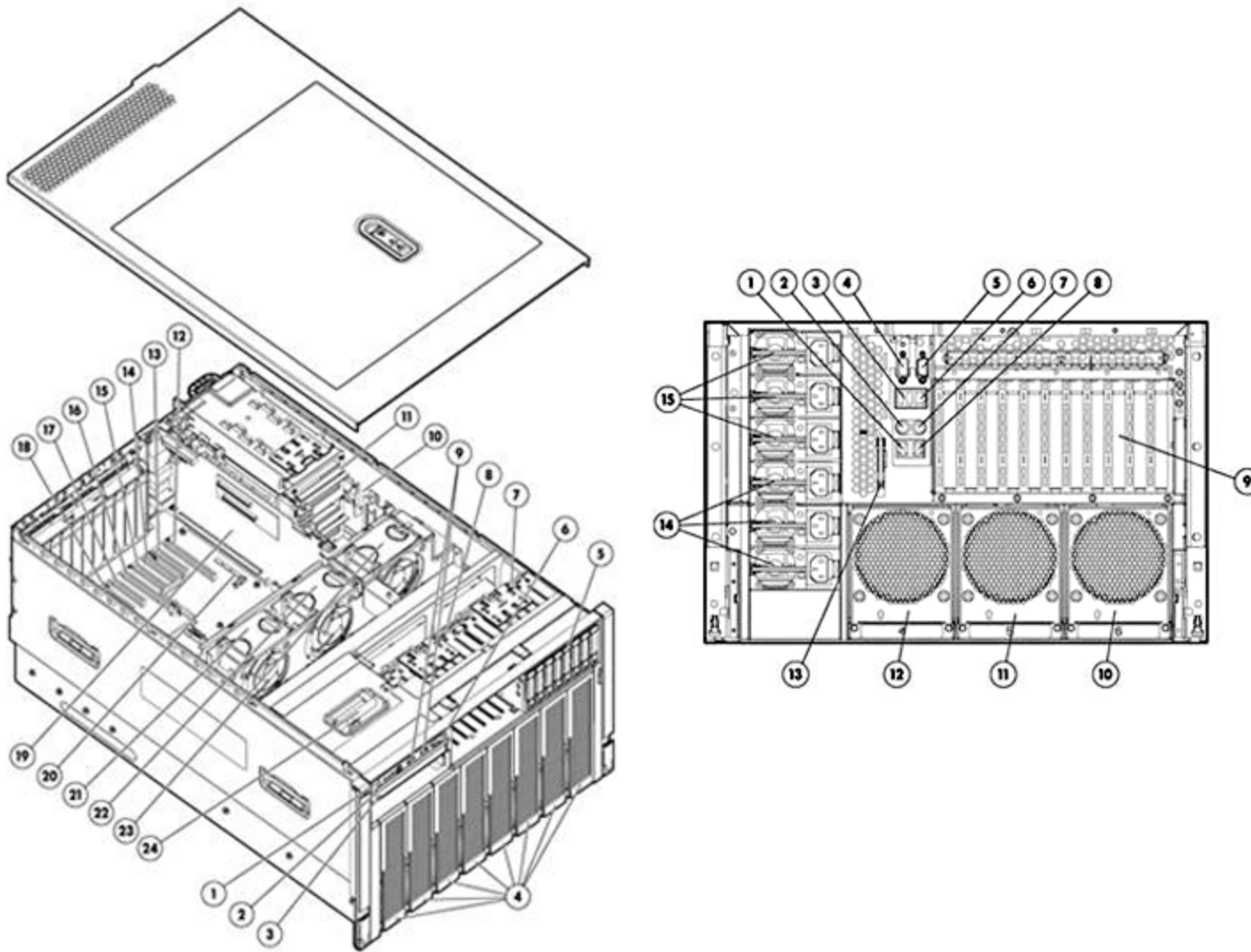


### Overview



#### Front View:

1. Front Panel LED display (internal and external health, Unit ID button & LED, NIC LED and Power Button)
2. System Insight Display (SID)
3. Slimline Media Bay
4. Processor Memory Cells (1 - 8)
5. Eight bay Small Form Factor (SFF) Serial Attached SCSI (SAS) drive cage
6. Video Connector
7. SAS backplane (Standard)
8. SAS backplane (Optional)
9. USB Connectors
10. BBWC Battery Pack
11. Power Supply Backplane
12. PCI-Express x8 non-hot-plug expansion slot 1
13. PCI-Express x4 non-hot-plug expansion slot 2
14. PCI-Express x4 non-hot-plug expansion slot 3
15. PCI-Express x4 non-hot-plug expansion slot 4
16. PCI-Express x16 non-hot-plug expansion slot 5
17. PCI-Express x4 non-hot-plug expansion slot 6
18. PCI-Express x4 non-hot-plug expansion slot 7
19. Serial Peripheral Interface (SPI) Board
20. System Maintenance Switch
21. Fan 1
22. Fan 2
23. Fan 3

Not shown: PCI-Express expansion slots 8 - 11

#### Rear View:

1. NIC connector 1
2. Keyboard connector
3. USB connector
4. Video connector
5. Serial connector
6. HP Integrated Lights-Out 2 (iLO 2) connector
7. Mouse connector
8. NIC connector 2
9. PCI Express expansion slots
10. Fan 6
11. Fan 5
12. Fan 4
13. T-15 Torx screwdriver
14. Redundant power supply 4 - 6 (optional)
15. Power supply 1 - 3

## Overview

## What's New

- This release introduces support for new Quad-Core AMD Opteron™ Processors with higher frequencies
- Support for HP NC522SFP Dual Port 10GbE Gigabit Server Adapter
- Support for new HP Smart Array Controllers:
  - HP Smart Array P212, P411, and P410 Controllers
  - HP SAS Expander Card

## At A Glance

The HP ProLiant DL785 G5, the newest and most expandable addition to the award winning HP ProLiant line, is an 8-socket x86 server, supporting up to 8 AMD Opteron™ Quad-Core processors, 512 GB of memory and 11 PCI-e I/O slots. With this highly scalable feature set the DL785 G5, is an ideal choice for the growing enterprise class database, consolidation and virtualization environments seeking to improve server utilization and reduce server sprawl, while continuing to leverage all the familiar and easy to use ProLiant management tools and options.

- **Processors:**
  - Supports 4 or 8 Quad-Core AMD 8300 Series Processors
  - Serverworks HT-2100 Northbridge and HT-1000 Southbridge chipset
- **Memory:**
  - Up to 512 GB of memory, 64 slots of PC2-5300 or PC2-6400 registered DIMMs up to 800MHz
  - Support of low-power or regular PC2-5300 or PC2-6400 registered DIMMs
- **Storage Controller:**
  - HP Smart Array P400i Controller
  - Optional 256MB and 512MB battery backed write cache
- **Internal Drive Support:**
  - Support for up to 8 hot plug SFF SAS drives, standard
  - Optional SAS Option Kit available to support an additional 8 hot plug SFF SAS drives, for a total of 16 internal drives
  - Optional Slimline DVD/CD-RW drives
- **Network Controller:**
  - Two HP NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots:**
  - 11 total slots: (3) x16 PCI-Express; (3) x8 PCI-Express; (5) x4 PCI-Express
  - Optional backplane with 9 total slots: (2) x16 HTx ; (1) x16 PCI-Express; (1) x8 PCI-Express; (5) x4 PCI-Express

**NOTE:** VMware is not supported on DL785 G5 with backplane that has (2) HTx slots and (7) PCI-Express slots
- **Ports:**
  - USB: (5) Total USB 2.0 Ports: (2) front; (2) rear; (1) internal
  - Video: One front and one rear video ports
- **Graphics Processing Unit (GPU):**
  - Support for Nvidia FX5600 1.5GB PCIe
- **Redundancy:**
  - Redundant hot plug power supplies and fans
- **Infrastructure Management:**
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - HP Integrated Lights-Out 2 management processor for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - 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, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.
  - 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. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- **Form Factor:**
  - Delivering maximum performance in a versatile, rack optimized form factor
- **Operating Systems and Virtualization Software Support for ProLiant Servers:**
  - Supports Windows, RHEL, SLES, OEL, Solaris, VMware, Citrix XenServer
- **Deployment/Serviceability:**
  - Tool-less and virtually cable-less internal design
  - System Insight Display on the front bezel for quick and easy server diagnostics
  - Rapid Deployment racking solution (rack rails and cable management)
- **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

## Overview

response. Additional information regarding worldwide limited warranty and technical support is available at:  
<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Standard Features

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

<b>Processor</b>	AMD Opteron™ Processor 8393 SE, Quad-Core (3.1 GHz, 105W ACP)
<a href="#">Four or eight of the following depending on Model</a>	AMD Opteron™ Processor 8389, Quad-Core (2.9 GHz, 75W ACP)
	AMD Opteron™ Processor 8387, Quad-Core (2.8 GHz, 75W ACP)
	AMD Opteron™ Processor 8381 HE, Quad-Core (2.5 GHz, 55W ACP)
	AMD Opteron™ Processor 8376 HE, Quad-Core (2.3 GHz, 55W ACP)
	AMD Opteron™ Processor 8384, Quad-Core (2.7 GHz, 75W ACP)
	AMD Opteron™ Processor 8380, Quad-Core (2.5 GHz, 75 W ACP)
	AMD Opteron™ Processor 8378, Quad-Core (2.4 GHz, 75 W ACP)
	<b>NOTE:</b> 4 or 8 supported.

<b>Cache Memory</b>	512 KB integrated level 2 cache per core 2 or 6 MB shared level 3 cache per processor (depends on model)
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<b>Upgradeability</b>	Supports up to 8 processors
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<b>Chipset</b>	Serverworks HT-2100 Northbridge and HT-1000 Southbridge chipset
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<b>Memory Protection &amp; Functionality</b>	Advanced ECC
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<b>Memory</b>	Type	PC2-5300 Registered DIMMs at 667 MHz
	<a href="#">One of the following depending on model</a>	PC2-6400 Registered DIMMs at 800 MHz
	Standard PC2-5300	16GB (16 x 1GB) (8378 Processor)
	Standard PC2-6400	32GB (8 x 4GB) (8389, 8387 Processors)
	<a href="#">One of the following depending on Model</a>	64GB (16 x 4GB) (8393 SE Processor)
	Maximum	512GB (64 x 8GB)

<b>Network Controller</b>	Two HP NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
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### Expansion Slots

I/O backplane with 11 PCIe slots	Expansion Slots	Technology	Bus Width**	Connector Width	Bus Number*	Device No.**	Form Factor	Notes
	1	PCIe	x8	x16	4	0	Full-size	
	2	PCIe	x4	x8	7	0	Full-size	
	3	PCIe	x4	x8	10	0	Full-size	
	4	PCIe	x4	x8	13	0	Full-size	
	5	PCIe	x16	x16	65	0	Full-size	
	6	PCIe	x4	x8	68	0	Full-size	
	7	PCIe	x4	x8	71	0	Full-size	
	8	PCIe	x16	x16	129	0	Full-size	
	9	PCIe	x8	x16	132	0	Full-size	
	10	PCIe	x16	x16	193	0	Full-size	
	11	PCIe	x8	x16	196	0	Full-size	

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

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

**NOTE:** All slots are non-hot-plug Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number. Slots are enumerated differently based on the operating system. Microsoft operating systems enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

### Standard Features

I/O backplane with 7 PCIe & 2 HTx slots	Expansion Slots	Technology	Bus Width**	Connector Width	Bus Number*	Device No.**	Form Factor	Notes
	1	PCIe	x8	x16	4	0	Full-size	
	2	PCIe	x4	x8	7	0	Full-size	
	3	PCIe	x4	x8	10	0	Full-size	
	4	PCIe	x4	x8	13	0	Full-size	
	5	PCIe	x16	x16	65	0	Full-size	
	6	PCIe	x4	x8	68	0	Full-size	
	7	PCIe	x4	x8	71	0	Full-size	
	8	HTx	x16	N/A	128	N/A	Full-Height/Full-Length	No Slot
	10	HTx	x16	N/A	192	N/A	Full-Height/Full-Length	No Slot

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

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

**NOTE:** All slots are non-hot-plug Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number. Slots are enumerated differently based on the operating system. Microsoft operating systems enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

**NOTE:** This optional IO backplane with 7 PCIe and 2 HTX slots replaces standard I/O backplane with 11 PCIe slots.

**NOTE:** VMware is not supported on DL785 G5 with backplane that has (2) HTx slots and (7) PCI-Express slots.

**Storage Controllers** HP Smart Array P400i Controller

### Storage Data Protection

The Battery-Backed Write Cache (BBWC) Enabler for the Smart Array P400i Controller protects up to 512-MB write cache memory from hard boot, power, controller, or system board failures.

- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

**NOTE:** Safely transport your write cache data to another HP ProLiant DL785 G5 in the data center by removing the BBWC Enabler and Smart Array P400i Controller Memory Module simultaneously (connected by short cable).

Storage	Optical Drive	Slimline DVD/CD-RW Drive Standard on all models - ejectable for security and serviceability
	Hard Drives	None ship standard
	Hard Disk Drive Backplane	Standard: Internal SAS backplane supports up to eight SFF hard disk drives Optional: Adding the optional SAS Option Kit enables the second SAS backplane to support an additional eight SFF hard disk drives

**Maximum Internal Storage Type** Hot Plug SAS 8.000TB 16 x 500GB SFF SAS drives

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front, 1 rear
	Keyboard	1
	USB 2.0 Ports	2 front, 2 rear, 1 internal
	HP Integrated Lights-Out 2 (iLO 2)	1
	Network RJ-45	2

### Standard Features

<b>Graphics</b>	Integrated ATI ES1000 with 32MB memory	
<b>Form Factor</b>	Rack (7U = 12.25 inches), ships with sliding rails and cable management system Space saving form factor (7U) provides space efficiencies while providing maximum deployment flexibility	
<b>HP Insight management software</b>	HP Insight Foundation	Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.  HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: <a href="http://www.hp.com/go/foundation">www.hp.com/go/foundation</a> .  The foundation pack includes: <ul style="list-style-type: none"> <li>● HP SmartStart</li> <li>● HP Management</li> <li>● HP ProLiant Firmware Maintenance</li> </ul> SmartStart version supported (minimum): SmartStart 8.0 <a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a>
	Integrated Lights-Out (iLO) (integrated on system board)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: <a href="http://www.hp.com/go/iLO">www.hp.com/go/iLO</a>
	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 <a href="http://www.hp.com/go/insightcontrol">www.hp.com/go/insightcontrol</a>
	HP Insight Dynamics for ProLiant	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: <a href="http://www.hp.com/services/insight">http://www.hp.com/services/insight</a> .  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 StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.  <b>NOTE:</b> For more information, visit: <a href="http://www.hp.com/go/insightdynamics">http://www.hp.com/go/insightdynamics</a>

### Standard Features

#### Industry Standard Compliance

ACPI 1.0a. Compliant  
 PCI 2.2 Compliant  
 PXE Support  
 WOL Support (with embedded NC371i Multifunction Gigabit Network Adapters)  
 Physical Address Extension (PAE) Support  
 Microsoft® Logo certifications  
 USB 2.0 Support

#### Intelligent Manageability

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

#### Serviceability

- System Insight Display - precisely depicts all major subsystems of the server (PCI I/O, Memory, CPU, Redundant Cooling, Interlock, Thermtrip) and gives instant visual indication of fault status. Located on top front of server, beneath lid.
- Tool-less, virtually cable-less interior design
  - Tool-less access to interior of server
  - Ejectable, slimline Media Bay media drives (DVD/CD-RW) removable without the use of tools
  - Front accessible processors and memory
  - PCI Card Guides locks full length PCI cards in place during transit
  - Six individually removable fans
  - Tool-less removal of system board
- Quick Deploy Rails
- Tool-less design "snap in" rail

#### Security

Power-on password  
 Keyboard password  
 External USB port enable/disable  
 Network Server Mode  
 Serial interface control  
 Administrator's password  
 Removable Diskette drive (optional)  
 Removable optical drive

#### Power Supply

HP 1200W 12V Hot plug AC Power Supply 910W (low line), 1300W (high line).  
 Size is 2.8"(H) X 4.9"(W) X 7.5"(L).  
**NOTE:** Three Hot Plug Power Supplies ship standard with the AM431A, AM430A, and AM424A skus. Three optional power supplies may be added for redundancy.  
**NOTE:** Six Hot Plug Power Supplies ship standard with the AM429Askus (the 4th, 5th and 6th power supplies are for redundancy).

#### UPS and PDU Power Cord Matrix

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).

#### Server Power Cords

**NOTE:** The HP ProLiant DL785 G5 servers ship standard worldwide with a 6-foot IEC 320-C14 to IEC320-C13 jumper cord. If you require a local power cord, please check the Power Specifications below for the appropriate country-specific power cord, or consult the Power Cord Matrix:  
<http://www.hp.com/go/powercordmatrix>.

### Standard Features

<b>System Fans</b>	Standard	6 Hot plug, redundant fans
	Maximum	6 Hot plug, redundant fans

**NOTE:** Fans are N+1 hot plug redundant and individually removable.

**Required Cabling** For required cabling information, refer to the HP Web site at: [www.hp.com/servers/dl785](http://www.hp.com/servers/dl785)

**Operating Systems and Virtualization Software** [Microsoft Windows Server](#)  
**Support for ProLiant Servers** [Microsoft Windows Server Hyper V](#)  
[Red Hat Enterprise Linux \(RHEL\)](#)  
[SUSE Linux Enterprise Server \(SLES\)](#)  
[Oracle Enterprise Linux \(OEL\)](#)  
[Solaris](#)  
[VMware](#)  
[Citrix XenServer](#)

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page [www.hp.com/support/DL785G5](http://www.hp.com/support/DL785G5).

### Rack Airflow Requirements

#### Rack 10000 G2 series Cabinets

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

**CAUTION:** If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

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

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

**NOTE:** For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: [www.hp.com/servers/dl785](http://www.hp.com/servers/dl785).

### Rack Kit

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

### Telco Rack Support

Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions at: <http://www.hp.com/go/rackandpower>.

### 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>.



### Standard Features

#### HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

<http://www.hp.com/products/configurator>

#### Solutions

The very scalable 8-socket x86 ProLiant DL785 G5, with Quad-Core processing power, delivers outstanding flexibility, scalability and performance for customers growing Enterprise class database, consolidation and virtualization environments. Specifically, the HP ProLiant DL785 G5 would be excellent for running the following types of applications:

##### Typical Usage:

- High Performance Computing (HPC)
- Electronic Design Automation (EDA)/Semiconductor
- Financial
- Large database applications
- ERP / CRM
- Petrochemical
- Life Science and Material Science
- Video Rendering

#### Service and Support

HP Care Pack services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalizing on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions, provides a range of support services designed to meet the varying needs of your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

**Recommended Service** - simplify ProLiant solution implementation, maintenance, and management.

- Support: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service: Installation and Start up only

**Enhanced Service** - optimize service level to increase IT performance and availability.

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

**NOTE:** For a complete listing of service offerings and information visit:

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

<http://www.hp.com/go/proliant/carepack>

### Models

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

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

<b>DL785G5 O3.1 GHz, 4P, Processor(s)</b> <b>64GB,105W</b> AM429A	<b>Cache Memory</b>  <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Manageability</b>  <b>Hard Drives</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Power Supply</b> <b>Fans</b> <b>Form Factor</b>	(4) AMD Opteron™ Processor 8393 SE, Quad-Core (3.10 GHz, 105 Watts ACP)  512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor  64 GB (16 x 4 GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB  Two embedded NC371i Multifunction Gigabit Network Adapters  HP Smart Array P400i/512MB BBWC Controller  HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board  None ship standard  8.0TB max (16 x 500GB SAS)  Slimline CD-RW/DVD-ROM 24x Combo Drive  (6) 910W/1300W Power Supplies standard  6 Hot plug, redundant fans (individually removable)  Rack 7U
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<b>DL785G5 O2.9 GHz, 4P, Processor(s)</b> <b>32GB, 75W</b> AM430A	<b>Cache Memory</b>  <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Manageability</b>  <b>Hard Drives</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Power Supply</b> <b>Fans</b> <b>Form Factor</b>	(4) AMD Opteron™ Processor 8389, Quad-Core (2.90 GHz, 75 Watts ACP)  512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor  32 GB (8 x 4 GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB  Two HP NC371i Multifunction Gigabit Network Adapters  HP Smart Array P400i/512MB BBWC Controller  HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board  None ship standard  8.0TB max (16 x 500GB SAS)  Slimline CD-RW/DVD-ROM 24x Combo Drive  (3) 910W/1300W Power Supplies standard  6 Hot plug, redundant fans (individually removable)  Rack 7U
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<b>DL785G5 O2.8 GHz, 4P, Processor(s)</b> <b>32GB, 75W</b> AM431A	<b>Cache Memory</b>  <b>Memory</b> <b>Network Controller</b> <b>Storage Controller</b> <b>Manageability</b>  <b>Hard Drives</b> <b>Internal Storage</b> <b>Optical Drive</b> <b>Power Supply</b> <b>Fans</b> <b>Form Factor</b>	(4) AMD Opteron™ Processor 8387, Quad-Core (2.80 GHz, 75 Watts ACP)  512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor  32 GB (8 x 4GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB  Two HP NC371i Multifunction Gigabit Network Adapters  HP Smart Array P400i/512MB BBWC Controller  HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board  None ship standard  8.0TB max (16 x 500GB SAS)  Slimline CD-RW/DVD-ROM 24x Combo Drive  (3) 910W/1300W Power Supplies standard  6 Hot plug, redundant fans (individually removable)  Rack 7U
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### Models

<b>DL785G5 O2.4GHz, 4P, Processor(s)</b> <b>16GB, 105W</b> AM424A	(4) AMD Opteron™ Processor 8378, Quad-Core (2.40 GHz, 75 Watts ACP)
<b>Cache Memory</b>	512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor
<b>Memory</b>	16 GB (16 x 1 GB) of PC2-5300 DDR SDRAM (Standard) to 512 GB
<b>Network Controller</b>	Two HP NC371i Multifunction Gigabit Network Adapters
<b>Storage Controller</b>	HP Smart Array P400i/512MB BBWC Controller
<b>Manageability</b>	HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board
<b>Hard Drives</b>	None ship standard
<b>Internal Storage</b>	8.0TB max (16 x 500GB SAS)
<b>Optical Drive</b>	Slimline CD-RW/DVD-ROM 24x Combo Drive
<b>Power Supply</b>	Three 910W/1300W Power Supplies standard
<b>Fans</b>	6 Hot plug, redundant fans (individually removable)
<b>Form Factor</b>	Rack 7U

### 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 CTO product offerings and requirements.

**NOTE:** HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

**NOTE:** FIO indicates that this option only available as a Factory Installable Option.

#### Step 1: Base Configuration

<b>HP Models</b>	HP ProLiant DL785 G5 Rack CTO Chassis	AH233A
	<b>Factory Integrated Models ship with:</b>	
	Two embedded NC371i Multifunction Gigabit Network Adapters	
	HP Smart Array P400i Controller	
	HP Integrated Lights-Out 2 (iLO 2) management processor management	
	Six (6) Redundant Hot Plug Fans	
	Three Hot Plug Power Supply	
	Rack 7U Form Factor	

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

<b>HP Processors</b>	AMD Opteron™ 8393 SE 3.1GHz Quad-Core Processor (105W ACP) 4P Option Kit, FIO	535674-L21
	<b>NOTE:</b> If eight processors are desired, select one 535674-L21 and one 535674-B21.	
	AMD Opteron™ 8389 2.9GHz Quad-Core Processor (75W ACP) 4P Option Kit, FIO	535675-L21
	<b>NOTE:</b> If eight processors are desired, select one 535675-L21 and one 535675-B21.	
	AMD Opteron™ 8387 2.8GHz Quad-Core Processor (75W ACP) 4P Option Kit, FIO	535676-L21
	<b>NOTE:</b> If eight processors are desired, select one 535676-L21 and one 535676-B21.	
	AMD Opteron™ 8381 HE 2.5 GHz Quad-Core Processor (55W ACP) 4P Option Kit, FIO	535677-L21
	<b>NOTE:</b> If eight processors are desired, select one 535677-L21 and one 535677-B21.	
	AMD Opteron™ 8378 2.4 GHz Quad-Core Processor (75W ACP) 4P Option Kit, FIO	508201-L21
	<b>NOTE:</b> If eight processors are desired, select one 508201-L21 and one 508201-B21.	

<b>HP Memory</b>	HP 2GB (2x1GB) Single Rank PC2-5300 (DDR2-667) Registered Memory Kit	408851-B21
	HP 4GB (2x2GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408853-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408854-B21
	HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
	HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
	HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
	HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21
	HP 4GB (2x2GB) Single Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483401-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483403-B21
	<b>NOTE:</b> A minimum of two DIMMs (1 kit) must be installed per processor.	
	<b>NOTE:</b> Memory must be ordered in like-pairs, i.e. two of the same size.	
	<b>NOTE:</b> When PC2-6400 DIMMs modules are installed with a processor then the memory bus speeds for 4 or fewer, 6 or 8 DIMMs per processor will operate at PC2-6400, PC2-5300 and PC2-4200 respectively. All other processor and memory configurations will operate at PC2-5300 with 4 or fewer DIMMs and PC2-4200 with 6 or more DIMMs.	

### Configuration Information - Factory Integrated Models

#### HP Storage Controllers Optional Upgrades

HP Smart Array P400 256MB FIO Cache	405139-B21
<b>NOTE:</b> Supports Smart Array P400 Controller and Smart Array P400i Controller only.	
512MB Battery-backed write cache upgrade	405148-B21

#### HP Optical Drives

<b>NOTE:</b> Optical drives are ejectable.	
Slimline CD-RW/DVD-ROM 24X Combo Drive Option Kit	331903-B21
Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
HP DVD±R/RW 8X Slim	383975-B21

### Step 3: 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 factory integratable. Please contact your local sales representative for additional information.

<b>HP Processors</b>	AMD Opteron™ 8439SE 2.8GHz DL785 G6 Six-core Processor (105W ACP) 4P Option Kit	575261-B21
	AMD Opteron™ 8431 2.4GHz DL785 G6 Six-core Processor (75W ACP) 4P Option Kit	575260-B21
	AMD Opteron™ 8425HE 2.1GHz DL785 G6 4 Six-core Processor (55W ACP) 4P Option Kit	575259-B21
	AMD Opteron™ 8393 SE 3.1 GHz Quad-Core Processor (105W ACP) 4P Option Kit	535674-B21
	AMD Opteron™ 8389 2.9 GHz Quad-Core Processor (75W ACP) 4P Option Kit	535675-B21
	AMD Opteron™ 8387 2.8 GHz Quad-Core Processor (75W ACP) 4P Option Kit	535676-B21
	AMD Opteron™ 8381 HE 2.5 GHz Quad-Core Processor (55W ACP) 4P Option Kit	535677-B21
	AMD Opteron™ 8376 HE 2.3 GHz Quad-Core Processor (55W ACP) 4P Option Kit	515101-B21
	AMD Opteron™ 8384 2.7 GHz Quad-Core Processor (75W ACP) 4P Option Kit	507530-B21
	AMD Opteron™ 8380 2.5 GHz, Quad-Core Processor (75W ACP) 4P Option Kit	507528-B21
	AMD Opteron™ 8378 2.4 GHz, Quad-Core Processor (75W ACP) 4P Option Kit	508201-B21
	AMD Opteron™ 8360 SE 2.5 GHz Quad-Core Processor (105W ACP) 4P Option Kit	468118-B21
	AMD Opteron™ 8358 SE 2.4 GHz Quad-Core Processor (105W ACP) 4P Option Kit	468119-B21
	AMD Opteron™ 8356 2.3 GHz, Quad-Core Processor (75W ACP) 4P Option Kit	468120-B21
	AMD Opteron™ 8354 2.2 GHz, Quad-Core Processor (75W ACP) 4P Option Kit	468121-B21

<b>HP Memory</b>	HP 2GB (2x1GB) Single Rank PC2-5300 (DDR2-667) Registered Memory Kit	408851-B21
	HP 4GB (2x2GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408853-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408854-B21
	HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
	HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
	HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
	HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21
	HP 4GB (2x2GB) Single Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483401-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483403-B21

**NOTE:** A minimum of two DIMMs (1 kit) must be installed per processor.

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

**NOTE:** When PC2-6400 DIMMs modules are installed with a processor then the memory bus speeds for 4 or fewer, 6 or 8 DIMMs per processor will operate at PC2-6400, PC2-5300 and PC2-4200 respectively. All other processor and memory configurations will operate at PC2-5300 with 4 or fewer DIMMs and PC2-4200 with 6 or more DIMMs.

<b>HP Optical Drives</b>	<b>NOTE:</b> Optical drives are ejectable.	
	Slimline CD-RW/DVD-ROM Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21

### Core Options

#### 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:** All the internal drives in HP ProLiant DL785 G5 will operate at a maximum data transfer rate of 3Gb/s.

**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 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 507127-B21

HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 512547-B21

HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 507125-B21

HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 512545-B21

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

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive 507610-B21

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

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

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

HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive 572071-B21

HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive 572073-B21

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

[http://h18000.www1.hp.com/products/quickspecs/13415\\_div/13415\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html) (Worldwide)

#### HP Networking

##### Gigabit Ethernet adapters

HP NC112T PCIe Gigabit Server Adapter 503746-B21

HP NC360T PCI Express Dual Port Gigabit Server Adapter 412648-B21

HP NC364T PCI Express Quad Port Gigabit Server Adapter 435508-B21

**NOTE:** There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server.

HP NC373F PCI Express Multifunction Gigabit Server Adapter 394793-B21

HP NC373T PCI Express Multifunction Gigabit Server Adapter 394791-B21

HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter 458492-B21

##### 10 Gigabit Ethernet adapters

**NOTE:** No more than two 10GbE I/O devices are supported in a single ProLiant server.

**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 Server Adapter 468332-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 IB 4X DDR PCI-e Dual Port HCA 409376-B21

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

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

#### HP Power Supplies

HP 1200W 12V Hot plug AC Power Supply 437572-B21

**NOTE:** Three additional power supply units are required for full redundancy.

**NOTE:** If you require a local power cord, please check the Power Specifications below for the appropriate country-specific power cord, or consult the Power Cord Matrix: <http://www.hp.com/go/powercordmatrix>.

### Additional Options

#### HP Insight Software

#### HP Insight Control

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

HP Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates T9074BAE

HP Insight Control, Electronic License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates TC278AAE

HP Insight Control, Tracking License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates TC275A

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

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

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

**NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at:

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

**NOTE:** For additional license options please see the Insight Control QuickSpecs at: [http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### HP Insight Control for Linux

HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic TC213AAE

HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates TC209A

HP Insight Control for Linux, Media pack (DVD) - No licenses included TC208A

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

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

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

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

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

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

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

HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512485-B21

HP ProLiant Essentials Integrated Lights-Out Advanced Pack, Electronic, including 1 year of 24x7 Technical Support and Updates TA850AAE

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

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

[http://h18000.www1.hp.com/products/quickspecs/12362\\_div/12362\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html)

#### HP Insight Control server deployment

HP Insight Control server deployment Electronic License including 1 year 24x7 Technical Support and Updates T9082AAE

HP Insight Control server deployment 1-Server License including 1 year 24x7 Technical Support and Updates 452151-B21

**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:** Electronic licenses can be used to purchase multiple licenses with a single activation key, and is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.



### Additional Options

**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)

<b>HP I/O Accelerator Options</b>	HP 160GB SLC PCIe ioDrive	600278-B21
	<b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB MLC PCIe ioDrive	600279-B21
	<b>NOTE:</b> A low-profile PCI bracket is included for use in low-profile slots.	
	HP 320GB SLC PCIe ioDrive Duo	600281-B21
	HP 640GB MLC PCIe ioDrive Duo	600282-B21
	<b>NOTE:</b> Please see the QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html">http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html</a> (Worldwide)	

### HP Storage Controllers SAS Controller

#### Smart Array E500 Controller

HP Smart Array E500/256MB Controller 435129-B21

#### Smart Array P400 Controller

HP Smart Array P400/256 MB Controller 405132-B21

HP Smart Array P400/512 MB Controller with BBWC 411064-B21

#### Smart Array P800 Controller

HP Smart Array P800/512 BBWC Controller 381513-B21

#### Smart Array P212 Controller

HP Smart Array P212/Zero Memory Controller 462828-B21

HP Smart Array P212/256 MB Controller 462834-B21

#### Smart Array P410 Controller

HP Smart Array P410/256 MB Controller 462862-B21

HP Smart Array P410/512 MB with BBWC Controller 462864-B21

**NOTE:** AM436A HP DL785 Smart Array Controller cable option kit is included when ordered on the DL785 with factory integration.

**NOTE:** AM436A HP DL785 Smart Array Controller cable option kit is required each time the Smart Array P410 Controller is ordered without factory integration and will be used to control internal drives 9-16.

HP Smart Array P410/512MB with FBWC 578230-B21

HP Smart Array P410/1G with FBWC 572532-B21

#### Smart Array P411 Controller

HP Smart Array P411/256 MB Controller 462830-B21

HP Smart Array P411/512 MB with BBWC Controller 462832-B21

HP Smart Array P411/512MB Flash Backed Write Cache 578229-B21

HP Smart Array P411/1G Flash Backed Write Cache 572531-B21

#### Smart Array P812 Controller

HP Smart Array P812/1G Flash Backed Cache Controller 487204-B21

**NOTE:** AM436A HP DL785 Smart Array Controller cable option kit is required each time the Smart Array P812 Controller is ordered without factory integration and will be used to control internal drives 9-16.

#### Optional Upgrades

HP SA-P400 and SA-E500 24 In Battery Cable Kit 417836-B21

**NOTE:** This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array E500 is integrated outside of the factory if the BBWC is not pre-installed from the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.

512MB Battery-backed write cache upgrade 405148-B21

**NOTE:** For Smart Array P400 Controller only.

**NOTE:** If you install the 512MB DDR BBWC as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP SA-P400 and SA-E500 24 In Battery Cable Kit).

### Additional Options

Battery-backed write cache upgrade	383280-B21
<b>NOTE:</b> For Smart Array P400 Controller only.	
<b>NOTE:</b> If you install the Battery-backed write cache as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP SA-P400 and SA-E500 24 In Battery Cable Kit).	
256 MB Cache Module	462968-B21
<b>NOTE:</b> Supported on HP Smart Array P212 Controller only.	
512MB BBWC	462967-B21
Battery Kit upgrade	462969-B21
<b>NOTE:</b> Option kit not supported for factory integration.	
<b>NOTE:</b> To enable BBWC on the 256MB cache.	
<b>NOTE:</b> Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.	
512MB Flash Backed Write Cache	534916-B21
<b>NOTE:</b> Option kit not supported for factory integration.	
<b>NOTE:</b> Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.	
1G Flash Backed Write Cache	534562-B21
<b>NOTE:</b> Option kit not supported for factory integration.	
<b>NOTE:</b> Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.	
HP DL785 Smart Array Controller cable option kit	AM436A
<b>NOTE:</b> Option kit not supported for factory integration	
<b>NOTE:</b> Supports internal connection of Smart Array P410 and P812 Controllers. Provides (2) cables to connect the Controller to the Optional SAS Backplane (HP DL785 G5 SAS Option Kit - AH267A). This is required each time one of the Smart Array P410 and P812 Controllers is ordered without factory integration and will be used to control internal drives 9-16.	
<b>SAS Controller Options</b>	
HP DL785 SAS Expander cable option kit	AM440A
<b>NOTE:</b> Option kit not supported for factory integration	
<b>NOTE:</b> Required each time the 468406-B21 HP SAS Expander card is ordered. Provides (6) cables to connect the Smart Array Controller to the Expander, and the Expander to the Primary and Optional SAS backplanes. The SAS cables provided with the DL785 and the Expander are not used.	
<b>NOTE:</b> Please see the following Controller QuickSpecs for Technical Specifications and additional information:	
<a href="http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html">http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html</a> (Smart Array E500 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html">http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html</a> (Smart Array P400 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html">http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html</a> (Smart Array P800 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html">http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html</a> (Smart Array P212 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html">http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html</a> (Smart Array P411 Controller)	
<a href="http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html">http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html</a> (Smart Array P812 Controller)	
<a href="http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html">http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html</a> (SAS Expander Card)	
<b>SAS HBA</b>	
HP SC08Ge Host Bus Adapter	488765-B21
HP SC44Ge Host Bus Adapter	416096-B21
<b>NOTE:</b> Please see the following QuickSpecs for additional information:	
<a href="http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html">http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html</a> (SC08Ge HBA)	
<a href="http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html">http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html</a> (SC44Ge HBA)	
<b>SCSI HBA</b>	
HP SC11Xe Host Bus Adapter	412911-B21
<b>NOTE:</b> Recommended HBA for SCSI tape drive connect.	

### Additional Options

<b>HP SAS Option Kit</b>	<p>HP DL785 G5 SAS Option Kit</p> <p><b>NOTE:</b> The SAS Option Kit enables the second drive cage to support an additional eight SFF SAS hard disk drives, for a total internal support of sixteen SFF SAS hard disk drives.</p> <p><b>NOTE:</b> When choosing the HP DL785 G5 SAS Option Kit, customer must also order one of the following Smart Array Controllers: HP Smart Array P400 Controller, HP Smart Array P800 Controller, HP Smart Array P812 Controller, or the HP Smart Array P410 Controller.</p> <p><b>NOTE:</b> The SAS Option Kit enables the second drive cage to support an additional eight SFF SAS hard disk drives, for a total internal support of sixteen SFF SAS hard disk drives.</p>	AH267A
<b>HP I/O Expansion Options</b>	<p>HP I/O PCI-e &amp; HTx Backplane Upgrade Kit</p> <p><b>NOTE:</b> I/O Backplane with 7 PCIe and 2 HTx slots.</p> <p><b>NOTE:</b> VMware is not supported on DL785 G5 with backplane that has (2) HTx slots and (7) PCI-Express slots.</p>	AH262A
<b>HP Cable Option</b>	<p>HP High Power Graphics Card Cable Option</p> <p><b>NOTE:</b> High Line Voltage is required with this kit. Using Low Line Voltage will halt the system. However if the total power usage is validated using the power calculator, the system halt condition with Low Line Voltage may be overridden by pressing "F9" to enter the RBSU and enabling the "Power Supply Override" setting under "Advanced Options".</p>	AH270A
<b>Tape Backup</b>	<p><b>NOTE:</b> For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: <a href="http://www.hp.com/go/tape">http://www.hp.com/go/tape</a>. For hardware and software compatibility of HP StorageWorks tape backup products see: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>.</p>	
	HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A
	<p>HP StorageWorks DAT 320 SAS Internal Tape Drive</p> <p><b>NOTE:</b> For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	AJ830A
	<p>HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive</p> <p><b>NOTE:</b> For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	EH847A
	<p>HP StorageWorks LTO-4 Ultrium 1760 Internal Tape Drive</p> <p><b>NOTE:</b> For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	EH919A
	<p>HP StorageWorks LTO-4 Ultrium 1840 Internal Tape Drive</p> <p><b>NOTE:</b> For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	EH860A
	<p>HP StorageWorks LTO-5 Ultrium 3280 Internal Tape Drive</p> <p><b>NOTE:</b> For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	EH899A
	<p>HP StorageWorks 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader</p> <p><b>NOTE:</b> Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	BL536A
	<p>HP StorageWorks MSL2024 Tape Library with one LTO-5 Ultrium 3000 SAS Drive</p> <p><b>NOTE:</b> Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	BL537A
	<p>HP StorageWorks MSL4048 Tape Library with one LTO-5 Ultrium 3000 SAS Drive</p> <p><b>NOTE:</b> Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	BL538A
	<p>HP StorageWorks MSL8096 Tape Library with one LTO-5 Ultrium 3000 SAS Drive</p> <p><b>NOTE:</b> Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.</p>	BL539A

### Additional Options

#### Disk Backup

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

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

HP StorageWorks D2D2504i Backup System EJ002B

**NOTE:** 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D4009i Backup System EH939A

**NOTE:** 7.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D4112fc Backup System EH993B

**NOTE:** 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.

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

HP StorageWorks RDX500 Internal Removable Disk Backup System AJ934A

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.

HP StorageWorks RDX750 Internal Removable Disk Backup System AW577A

**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 750GB of disk capacity per data cartridge.

#### HP StorageWorks Options

#### StorageWorks 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 StorageWorks 81B PCI-e FC HBA Single Port AP769A

HP StorageWorks 82B PCI-e FC HBA Dual Port AP770A

HP StorageWorks 41B 4Gb PCI-e FC HBA AP767A

HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA AP768A

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port AJ762A

HP StorageWorks 82E PCI-e FC HBA Dual Port AJ763A

HP StorageWorks FC2142 4Gb PCI-e HBA A8002A

HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA A8003A

#### QLogic Fibre Channel HBAs

HP StorageWorks 81Q PCI-e FC HBA Single Port AK344A

HP StorageWorks 82Q PCI-e FC HBA Dual Port AJ764A

HP StorageWorks FC1142 4Gb PCI-e HBA AE311A

HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA AE312A

#### StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter AH627A

**NOTE:** Recommended HBA for MSL SCSI Tape Library connect.

#### StorageWorks Converged Network Adapter

HP CN1000E 2P Converged Network Adapter AW520A

### Additional Options

#### HP Disk Storage Systems

#### MSA SAN Storage Arrays

HP StorageWorks 50 Modular Smart Array 364430-B21

**NOTE:** Please see the QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: [http://h18000.www1.hp.com/products/quickspecs/12245\\_div/12245\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html) (Worldwide)

HP StorageWorks 60 Modular Smart Array 418408-B21

**NOTE:** Supports 12 SFF drives, and SAS 3 Gb/s and SATA 1.5 Gb/s.  
**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/12627\\_div/12627\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html)

HP StorageWorks 70 Modular Smart Array 418800-B21

**NOTE:** Supports 25 SFF drives, and SAS 3 Gb/s and SATA 1.5 Gb/s.  
**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/12652\\_div/12652\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html)

#### Disk Enclosures

HP StorageWorks D2700 Disk Enclosure AJ941A

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

#### HP Uninterruptible Power Systems

#### HP Rack-mountable UPS

##### HP R1500 G2 UPS

HP, R1.5kVA UPS, 1U, NA AF419A

HP, R1.5kVA UPS, 1U, INTL AF418A

HP, R1.5kVA UPS, 1U, JPN/TW AF421A

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

[http://h18000.www1.hp.com/products/quickspecs/12507\\_div/12507\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html)

##### HP R3000v Uninterruptible Power System

HP R3000v UPS AF444A

**NOTE:** The R3000v is available in China and India only.

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

[http://h18000.www1.hp.com/products/quickspecs/13129\\_div/13129\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html)

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

HP R/T3000 UPS, Low voltage NA/JPN AF452A

HP R/T3000 UPS, High voltage, NA/JPN AF453A

HP R/T3000 UPS, High voltage, detachable inlet cord INTL AF454A

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

[http://h18000.www1.hp.com/products/quickspecs/13417\\_div/13417\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html) (Worldwide)

##### HP Rack-Mountable R5500 UPS

HP R5500 VA UPS, INTL AF416A

HP R5500 VA UPS, NA/JPN AF426A

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

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

**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>.

### Additional Options

#### HP Power Distribution Monitored PDUs Units

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

HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø, 24A (NA/JPN)	AF503A
HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A (NA/JPN)	AF505A
HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
HP 22.1 kVA S2316 Monitored PDU- dual input, 3Ø, 16A (INTL)	AF507A
HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
HP 14.7 kVA S2132 Monitored PDU- dual input, 1Ø, 32A (INTL)	AF509A
HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A

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

HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A (NA/JPN)	AF916A
HP 22 kVA S332 Monitored PDU - single input, 3-phase, 32A (INTL)	AF917A
HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A

##### 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 Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan)	252663-D71
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**NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.

HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
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HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
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HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)	252663-B21
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**NOTE:** This mPDU (252663-B21), 40A model has a hardwired input.

HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24
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**NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

**NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords:

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

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

#### HP Rack Series

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

10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A

**NOTE:** Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.

10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
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**NOTE:** It is mandatory to use a shock pallet when shipping racks with equipment installed.

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

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

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

#### HP Rack Options

##### Keyboards and Monitors

TFT7600 Rackmount Keyboard Monitor US	AG052A
TFT7600 Rackmount Keyboard Monitor UK	AG053A
TFT7600 Rackmount Keyboard Monitor GR	AG054A
TFT7600 Rackmount Keyboard Monitor FR	AG055A

### Additional Options

TFT7600 Rackmount Keyboard Monitor IT	AG056A
TFT7600 Rackmount Keyboard Monitor SP	AG057A
TFT7600 Rackmount Keyboard Monitor DEN	AG058A
TFT7600 Rackmount Keyboard Monitor NOR	AG059A
TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
TFT7600 Rackmount Keyboard Monitor SWI	AG061A
TFT7600 Rackmount Keyboard Monitor PORT	AG062A
TFT7600 Rackmount Keyboard Monitor BEL	AG063A
TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
TFT7600 Rackmount Keyboard Monitor RUS	AG065A
TFT7600 Rackmount Keyboard Monitor INTL	AG066A
HP TAA TFT7600 US Rkmntkybd 17in Monitor	AG067A
1U Rackmount Keyboard with USB, US	AG072A
1U Rackmount Keyboard with USB, UK	AG073A
1U Rackmount Keyboard with USB, GR	AG074A
1U Rackmount Keyboard with USB, FR	AG075A
1U Rackmount Keyboard with USB, ITL	AG076A
1U Rackmount Keyboard with USB, SP	AG077A
1U Rackmount Keyboard with USB, NOR	AG079A
1U Rackmount Keyboard with USB, SE/FI	AG080A
1U Rackmount Keyboard with USB, SWI	AG081A
1U Rackmount Keyboard with USB, PORT	AG082A
1U Rackmount Keyboard with USB, BEL	AG083A
1U Rackmount Keyboard with USB, JPN2	AG084A
1U Rackmount Keyboard with USB, RUS	AG085A
1U Rackmount Keyboard with USB, INTL	AG086A

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

#### HP KVM Switch Options

USB Virtual Media, CAC Interface Adapter	AF623A
PS2/USB Virtual Media, CAC Interface Adapter, 1 pack	AF624A
<b>NOTE:</b> Requires PS/2 mouse and keyboard connections and one USB port on server.	
HP KVM CNSL SRL/PWR G2 ITFC ADPTR	AF625A
0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A
1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A
PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
<b>NOTE:</b> Requires PS/2 and one USB port on server.	
HP Server console switch 0x2x8	AF616A
HP Server console switch 0x2x16	AF617A
HP TAA Server console switch 0x2x16	AF626A
PS/2 Interface Adapter, 1 pack	262588-B21
PS/2 Interface Adapter, 8 pack	262587-B21
USB Interface Adapter - 1 pack	336047-B21
Serial Interface adapter - 1 Pack with power supply	373035-B21
<b>NOTE:</b> VT100 terminal emulation.	
<b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
HP 1x4 Server Switch	AF611A
PS2 Server Console Cable, 6 ft, 2 pack	AF612A
USB Server Console Cable, 6 ft, 2 pack	AF613A
<b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
<b>HP Serial Console Server Options</b>	
HP 16 Port Serial Console Server (worldwide)	AF101A
HP 48 Port Serial Console Server (worldwide)	AF102A

### Additional Options

Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

**NOTE:** Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: <http://www.hp.com/go/kvm>.

**NOTE:** For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <http://www.hp.com/go/kvm>.

### HP USB and SD Options

HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
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.

### HP Care Pack Services Hardware Services On-site Service

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	UM427E
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UM428E

#### Hardware Services 6-Hour Call to Repair On-site Service

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UM429E
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#### Installation & Start-up Services

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	UM451E
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#### Support Plus 24

Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	UM430E
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**NOTE:** For more information, customer/resellers can contact: <http://www.hp.com/services/carepack>.



### Memory

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

#### HP ProLiant DL785 G5 4P Models

##### Standard Memory

8 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz with Advanced ECC or

16 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz with Advanced ECC or

32 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz or 800 MHz with Advanced ECC or 64 GB PC2-6400 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 800 MHz with Advanced ECC or 128 GB PC2-6400 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 800 MHz with Advanced ECC or 32 GB PC2-6400 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) low power memory running at 800 MHz with Advanced ECC. At least one pair of DIMMs must be installed in slots 1A and 2A to operate the server. Observe the following DIMM installation guidelines to add additional memory to the server:

- DIMMs must be installed in pairs.
- DIMM installed on the same memory bank must have the same part number.
- DIMMs installed in different banks can be of different sizes.
- DIMMs must be installed in decreasing capacity with the largest DIMMs installed in the banks furthest away from each processor.

Standard Memory Configuration (PN: AM424A)								
Total Memory = 16GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Standard Memory Configuration (PN: AM429A)								
Total Memory = 64GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	2GB	2GB	2GB	2GB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	2GB	2GB	2GB	2GB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	4GB	4GB	4GB	4GB	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	4GB	4GB	4GB	4GB	Empty	Empty	Empty	Empty

Memory

Standard Memory Configuration (PN: AM430A, AM431A)								
Total Memory = 32GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	4GB	4GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	4GB	4GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	4GB	4GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	4GB	4GB	Empty	Empty	Empty	Empty	Empty	Empty

Examples of other optional configurations include, but are not limited to:

Example #1: Optional Memory Configuration with DIMM mixing								
Standard Memory plus Optional Memory and Processors								
Total Memory = 64 GB								
	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	4GB	4GB	2GB	2GB	1GB	1GB	1GB	1GB
Processor 2 Memory Bus	4GB	4GB	2GB	2GB	1GB	1GB	1GB	1GB
Processor 3 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	4GB	4GB	4GB	4GB	2GB	2GB	1GB	1GB
Processor 8 Memory Bus	2GB	2GB	2GB	2GB	2GB	2GB	1GB	1GB

Example #2: Optional Memory Configuration with Partial Bus Population								
Standard Memory plus Optional Memory and Processors								
Total Memory = 32GB								
	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	1GB	1GB	1GB	1GB	Empty	Empty	Empty	Empty



Memory

<b>Example #3: Maximum Memory Configuration</b> Maximum Memory (Standard replaced with Optional Memory) <b>Total Memory = 512GB</b>								
	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 2 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 3 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 4 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 5 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 6 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 7 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB
Processor 8 Memory Bus	8GB	8GB	8GB	8GB	8GB	8GB	8GB	8GB

The following memory options are available from HP:

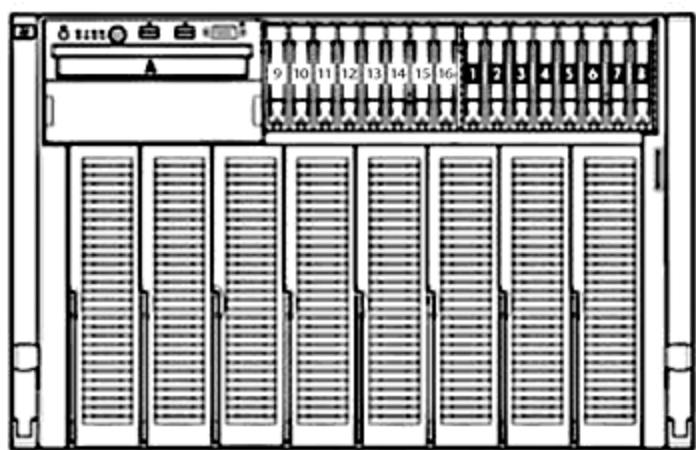
<b>HP Memory</b>	HP 2GB (2x1GB) Single Rank PC2-5300 (DDR2-667) Registered Memory Kit	408851-B21
	HP 4GB (2x2GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408853-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408854-B21
	HP 8GB (2x4GB) Dual Rank PC2-6400 (DDR2-800) Registered Memory Kit	497767-B21
	HP 8GB (2x4GB) Dual Rank x4 PC2-6400 (DDR2-800) Registered Low Power Memory Kit	504351-B21
	HP 16GB (2x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	408855-B21
	HP 64GB (8x8GB) Dual Rank PC2-5300 (DDR2-667) Registered Memory Kit	495605-B21
	HP 4GB (2x2GB) Single Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483401-B21
	HP 8GB (2x4GB) Dual Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483403-B21

**NOTE:** A minimum of two DIMMs (1 kit) must be installed per processor.

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

**NOTE:** When PC2-6400 DIMMs modules are installed with a processor then the memory bus speeds for 4 or fewer, 6 or 8 DIMMs per processor will operate at PC2-6400, PC2-5300 and PC2-4200 respectively. All other processor and memory configurations will operate at PC2-5300 with 4 or fewer DIMMs and PC2-4200 with 6 or more DIMMs.

### Storage



A Slimline Media Bay

1-8 Standard 8 SFF hot plug SAS drive bays

9-16 Optional 8 SFF hot plug SAS drive bays

### Drive Support

	Quantity Supported	Position Supported	Controller
<b>Ejectable Slimline Drives</b>			
IDE Slimline DVD-ROM Drive (8X/24X)	Up to 1	A	Integrated IDE
IDE Slimline CD-RW/DVD-ROM Combo Drive	Up to 1	A	Integrated IDE
IDE DVD±R/RW 8X Drive	Up to 1	A	Integrated IDE

#### 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:** All the internal drives in HP ProLiant DL785 G5 will operate at a maximum data transfer rate of 3Gb/s.

**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
300GB 6G SAS 10K DP	Up to 8	1-8	HP Smart Array P400i Controller
300GB 3G SAS 10K DP	Up to 8	9-16	HP Smart Array P400/256MB Controller
146GB 6G SAS 15K DP			HP Smart Array P400/512MB BBWC Controller
146GB 3G SAS 15K DP			HP Smart Array P800/512 BBWC Controller
146GB 6G SAS 10K DP			HP Smart Array P410/256 MB Controller
146GB 3G SAS 10K DP			HP Smart Array P410/512 MB with BBWC Controller
72GB 6G SAS 15K DP			HP Smart Array P410/512MB with FBWC
72GB 3G SAS 15K DP			HP Smart Array P410/1G with FBWC
			HP P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	Up to 16	1-16	HP Smart Array P410/256 MB Controller
300GB 3G SAS 10K DP			HP Smart Array P410/512 MB with BBWC Controller
146GB 6G SAS 15K DP			HP Smart Array P410/512MB with FBWC
146GB 3G SAS 15K DP			HP Smart Array P410/1G with FBWC
146GB 6G SAS 10K DP			HP P812/1G Flash Backed Cache Controller
146GB 3G SAS 10K DP			HP SAS Expander Card
72GB 6G SAS 15K DP			<b>NOTE:</b> SAS Expander card must be used with the HP Smart Array P410 Controller.
72GB 3G SAS 15K DP			

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

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 8	1-8	HP Smart Array P400i Controller

### Storage

Up to 8	9-16	<ul style="list-style-type: none"> <li>HP Smart Array P400/256MB Controller</li> <li>HP Smart Array P400/512MB BBWC Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB with BBWC Controller</li> <li>HP Smart Array P410/512MB with FBWC</li> <li>HP Smart Array P410/1G with FBWC</li> <li>HP P812/1G Flash Backed Cache Controller</li> </ul>
Up to 16	1-16	<ul style="list-style-type: none"> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB with BBWC Controller</li> <li>HP Smart Array P410/512MB with FBWC</li> <li>HP Smart Array P410/1G with FBWC</li> <li>HP P812/1G Flash Backed Cache Controller</li> <li>HP SAS Expander Card</li> </ul> <p><b>NOTE:</b> SAS Expander card must be used with the HP Smart Array P410 Controller.</p>

### SATA Hot Plug SFF Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P400i Controller
120GB 3.0G SATA SSD	Up to 8	9-16	<ul style="list-style-type: none"> <li>HP Smart Array P400/256MB Controller</li> <li>HP Smart Array P400/512MB BBWC Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB with BBWC Controller</li> <li>HP Smart Array P410/512MB with FBWC</li> <li>HP Smart Array P410/1G with FBWC</li> <li>HP P812/1G Flash Backed Cache Controller</li> </ul>
	Up to 16	1-16	<ul style="list-style-type: none"> <li>HP Smart Array P410/256 MB Controller</li> <li>HP Smart Array P410/512 MB with BBWC Controller</li> <li>HP Smart Array P410/512MB with FBWC</li> <li>HP Smart Array P410/1G with FBWC</li> <li>HP P812/1G Flash Backed Cache Controller</li> <li>HP SAS Expander Card</li> </ul> <p><b>NOTE:</b> SAS Expander card must be used with the HP Smart Array P410 Controller.</p>

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	Up to 4	External	<ul style="list-style-type: none"> <li>HP Smart Array E500/256MB Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> </ul>
60 Modular Smart Array	Up to 4	External	<ul style="list-style-type: none"> <li>HP Smart Array E500/256MB Controller</li> <li>HP Smart Array P212/Zero Memory Controller</li> <li>HP Smart Array P212/ 256 MB Controller</li> </ul>
	Up to 8		<ul style="list-style-type: none"> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P411/256 MB Controller</li> <li>HP Smart Array P411/512 MB BBWC Controller</li> <li>HP Smart Array P411/512MB Flash Backed Write Cache</li> <li>HP Smart Array P411/1G Flash Backed Write Cache</li> <li>HP Smart Array P812/1G Flash Backed Cache Controller</li> </ul>
70 Modular Smart Array	Up to 2	External	<ul style="list-style-type: none"> <li>HP Smart Array P212/Zero Memory Controller</li> <li>HP Smart Array P212/256 MB Controller</li> </ul>
	Up to 4		<ul style="list-style-type: none"> <li>HP Smart Array E500/256MB Controller</li> <li>HP Smart Array P800/512 BBWC Controller</li> <li>HP Smart Array P411/256 MB Controller</li> <li>HP Smart Array P411/512 MB BBWC Controller</li> <li>HP Smart Array P411/512MB Flash Backed Write Cache</li> <li>HP Smart Array P411/1G Flash Backed Write Cache</li> <li>HP Smart Array P812/1G Flash Backed Cache Controller</li> </ul>

### Tape and Disk-Based Backup

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



### Storage

	Position Supported	Controller	Controller Part Number
<b>HP StorageWorks SCSI Tape Drives</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	412911-B21
<b>HP StorageWorks USB Tape Drives</b> DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
<b>HP StorageWorks SAS Tape Drives</b> DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC44Ge Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	416096-B21
<b>HP StorageWorks SCSI Tape Autoloaders</b> DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	412911-B21
<b>HP StorageWorks SCSI Tape Libraries</b> MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	AH627A
<b>HP StorageWorks SAS Tape Autoloaders and Libraries</b> 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP SC44Ge Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a>	416096-B21
<b>HP StorageWorks 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 StorageWorks USB RDX Removable Disk Backup System</b>	External	USB 2.0 port	N/A



### Storage

RDX160  
RDX320  
RDX500  
RDX750

**HP StorageWorks D2D  
Backup Systems, iSCSI**  
D2D2500i  
D2D4000i

Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

N/A

**HP StorageWorks D2D  
Backup Systems, Fibre  
Channel**  
D2D4000fc

Direct server attach is not supported, requires connection via SAN fabric. See: <http://www.hp.com/go/connect>

N/A

### Power Specifications

HP 1200W CS HE Power Supply Kit							
Part Number	437572-B21						
Input Voltage Range ( V rms )	100 to 240						
Frequency Range (Nominal) ( Hz )	50/60						
Nominal Input Voltage ( Vrms )	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current ( A rms )	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating ( Watts )	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA ( Volt-Amp )	970	1079	1406	1406	1406	1406	1406
Efficiency ( % )	86	87	89	89	89	89	89
Power Factor	0.97						
Leakage Current ( mA )	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current ( A peak )	30						
Maximum Inrush Current duration ( mS )	20						
Maximum British Thermal Unit Rating ( BTU-Hr )	3174	3530	4600	4600	4600	4600	4600

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

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL785 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)
- There are certain Dual-core, lowline, max configurations that are not supported. All highline configurations are supported. Consult the Power Calculator to determine if your lowline configuration is supported.

Standard Rack Model Power Cords / Jumper Cords	Description
Asia Pacific	IEC320-C14 to IEC320-C13 Jumper Cord
Europe	IEC320-C14 to IEC320-C13 Jumper Cord
Japan	JIS C8303 to IEC320-C13 IEC320-C14 to IEC320-C13 Jumper Cord
PRC	IEC320-C14 to IEC320-C13 Jumper Cord
USA	IEC320-C14 to IEC320-C13 Jumper Cord



### Technical Specifications

<b>System Unit</b>	<b>Dimensions</b> (H x W x D) 12.04 x 17.32 x 27.4 in (30.58 x 44 x 69.6cm) (with bezel)							
	<b>Weight</b> (approximate)							
	<table border="0"> <tr> <td style="padding-left: 20px;">Maximum</td> <td>160lb (72 kg)</td> </tr> <tr> <td colspan="2" style="padding-left: 20px;">(all hard drives, power supplies, and processors installed)</td> </tr> <tr> <td style="padding-left: 20px;">Minimum</td> <td>147 lb (67 kg)</td> </tr> <tr> <td colspan="2" style="padding-left: 20px;">(one hard drive, 2 power supply, and 4 processor modules installed)</td> </tr> </table>	Maximum	160lb (72 kg)	(all hard drives, power supplies, and processors installed)		Minimum	147 lb (67 kg)	(one hard drive, 2 power supply, and 4 processor modules installed)
Maximum	160lb (72 kg)							
(all hard drives, power supplies, and processors installed)								
Minimum	147 lb (67 kg)							
(one hard drive, 2 power supply, and 4 processor modules installed)								
	<b>Input Requirements</b> (per 3 power supplies non redundant)							
	Rated Line Voltage	90 - 132 VAC 180 - 264 VAC						
	Rated Input Current	24A @ 100 VAC 14A @ 200 VAC						
	Rated Input Frequency	47 to 63 Hz						
	Rated Input Power	2400W @ 100-120 VAC 2800W @ 200-240 VAC						
	<b>BTU Rating</b>							
	Maximum	8189 BTU/hr @ 100-120 VAC 9554 BTU/hr @ 200-240 VAC						
	<b>Power Specifications</b>	<p><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></p> <ul style="list-style-type: none"> <li>● Click on the system of interest. Example: DL785 G5</li> <li>● Follow the instructions of the next screens</li> </ul>						
	<b>Power Supply Output</b> (per power supply)							
	Rated Steady-State Power	800 W (at 100 VAC), 1200 W (at 200 VAC)						
	Maximum Peak Power	800 W (at 100 VAC), 1200 W (at 200 VAC)						
	<b>System Inlet Temperature</b>							
	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000ft) 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° (-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.						
	<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	<table border="0"> <tr> <td style="padding-left: 40px;">L WAd</td> <td>7.6 B</td> </tr> <tr> <td style="padding-left: 40px;">L pAm</td> <td>58 dBa</td> </tr> </table>	L WAd	7.6 B	L pAm	58 dBa		
L WAd	7.6 B							
L pAm	58 dBa							
	Operating	<table border="0"> <tr> <td style="padding-left: 40px;">L WAd</td> <td>7.6 B</td> </tr> <tr> <td style="padding-left: 40px;">L pAm</td> <td>58 dBa</td> </tr> </table>	L WAd	7.6 B	L pAm	58 dBa		
L WAd	7.6 B							
L pAm	58 dBa							
	<b>Emissions</b>	<b>FCC Rating</b> Class A						

### Technical Specifications

<b>Classification (EMC)</b>	<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
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**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>Slimline CD-RW/DVD-ROM 24X Combo Drive</b>	<b>Shipping Dimensions</b>	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)		
	<b>Shipping Weight</b>	5 lb (2.27 kg)		
	<b>Disk</b>	Applicable Disk	DVD-ROM DVD-R (Read Only) 2.6 GB/side DVD-RAM (Read Only) 5.2 GB/side DVD-RAM (Read Only) CD-ROM Mode-1 data disc CD-ROM Mode-2 data disc CD Audio disc CD-Extra CD-RW CD-R CD Text PhotoCD CD-I (mode 2) CD-I Ready CD-Bridge	
	<b>Capacity</b>	DVD-ROM	DVD-SL	4.7 GB/side
			DVD-DL	8.5 GB/side
			Double Sided	9.40 GB/side
		DVD-R		3.95 GB/side
		DVD-RAM		2.6 GB/side and 5.2 GB/
		CD-ROM	Mode-1	650 MB (550 MB)
			Mode-2	742 MB (640 MB)
	<b>Block Size</b>	DVD		2,048 bytes
		CD		2,352 (Mode-0) 2352, 2340, 2336, 2048 bytes (Mode-1) 2352, 2340, 2336, 2048 bytes (Mode-2)
	<b>Diameter</b>	120 mm, 80 mm (with adapter at vertical mounting mode)		
	<b>Loading Mechanism</b>	Tray type		
	<b>Interface</b>	EIDE (ATAPI)		
	<b>Access Times (typical)</b>	Random	DVD-ROM < 120 ms, CD-ROM < 110 ms	
		Full-Stroke	DVD-ROM < 240 ms, CD-ROM < 160 ms	
	<b>Audio Output Level (typical)</b>	Line-out	CD 0.7 Vrms at 47 Kohms Load	
	<b>Data Transfer Rate (sustained)</b>	DVD-ROM	Single Layer	10.8 MB/sec. Max.
		DVD-RAM		2.77 MB/sec. Max
		CD-ROM		7.2 MB/sec. Max.
	<b>Cache Buffer</b>	2 MB		
	<b>Spin-up Time (typical)</b>	less than 10 seconds		
	<b>MTBF</b>	120,000 Power On Hours (POH)		
	<b>Ambient Temperature</b>	Operating	-22° to 140° F (-30° to 60° C)	
	<b>Relative Humidity</b>	Operating	10% to 80%	
		Storage/Transportation	5% to 95%	

### Technical Specifications

<b>Dimensions</b>	(HxWxD, maximum)	0.5 x 5.04 x 5.1 in (12.7 x 128 x 129.4 mm)
<b>Option Kit Contents</b>	DVD-ROM drive with installation guide, warranty card, registration card	

<b>HP Integrated Lights-Out 2 (iLO 2) integrated on system board</b>	<b>Architecture</b>	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	<b>Processor</b>	32-bit RISC processor core running at 66 MHz
	<b>Upgradeability</b>	Option firmware upgradeable via flash ROM
	<b>Video Support</b>	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
	<b>Interfaces</b>	One Ethernet network connection (10/100 Mb/s)
	<b>Memory</b>	2-MB Flash ROM 8-MB SDRAM
	<b>Operating System Support</b>	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 5.4 (32bit and 64bit) 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 Microsoft Windows XP Professional Edition Microsoft Windows Vista Business and Ultimate Editions Red Hat Enterprise Linux Desktop 5.00 SUSE Linux Enterprise Desktop 11 SUSE Linux Enterprise Desktop 10
	<b>Client Browser Support</b>	Microsoft Internet Explorer 7 Microsoft Internet Explorer 6 Firefox 3.5 (on supported Windows and Linux systems) Firefox 3.0 (on supported Windows and Linux systems)
	<b>iLO 2 Standard Features</b>	Virtual Text Remote Console Virtual KVM Virtual Power Button Control Virtual UID Control Power Regulator Control Dedicated LAN Connectivity Secure access using web browser Secure access using Secure Shell (SSH) client Serial connectivity Automatic IP Configuration via DHCP/DNS/WINS Industry Standard 128-bit Secure Sockets Layer (SSL) Security IML and iLO2 Event Logging Support for up to 12 user accounts with customizable access privileges
	<b>iLO Advanced Features (optional)</b>	Virtual Graphical Remote Console Virtual Floppy/USB Key drive Virtual CD-ROM drive Directory Services Integration Processor States Reporting Terminal Services Integration <b>NOTE:</b> For more information on how to purchase the HP iLO Advanced optional licensed features, visit the iLO QuickSpecs located: <a href="http://www.hp.com/go/iLO">www.hp.com/go/iLO</a>

### Technical Specifications

<b>Smart Array P400i Controller</b>	<b>Disk Drive and Enclosure Interface</b>	3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment)
	<b>SAS Connectors</b>	2 internal (SFF8484) x4 wide port connectors
	<b>Cache Memory Speed</b>	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	<b>Server Interface</b>	x8 2.5G PCIe provides 2GB/s maximum bandwidth.
	<b>SAS Speed</b>	x8 3G SAS provides 2.4GB/s maximum bandwidth.
	<b>Cache Memory</b>	40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable
	<b>Logical Drives Supported</b>	Up to 32 logical drives
	<b>Maximum Logical Drive Capacity</b>	2TB
	<b>Host Memory Addressing</b>	64-bit, supporting greater than 4GB server memory space
	<b>RAID Support</b>	RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping)

<b>Two embedded NC371i Multifunction Gigabit Server Adapters</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	
	<b>Data Transfer Method</b>	PCI Express, four lanes (x4)	
	<b>Controller</b>	BCM5706	
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
1000Base-TX (Half and Full-Duplex)		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>Environment-friendly Products and Approach</b>	<b>End-of-life Management and Recycling</b>	<p>Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.</p>
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### *Technical Specifications*

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