Overview

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.
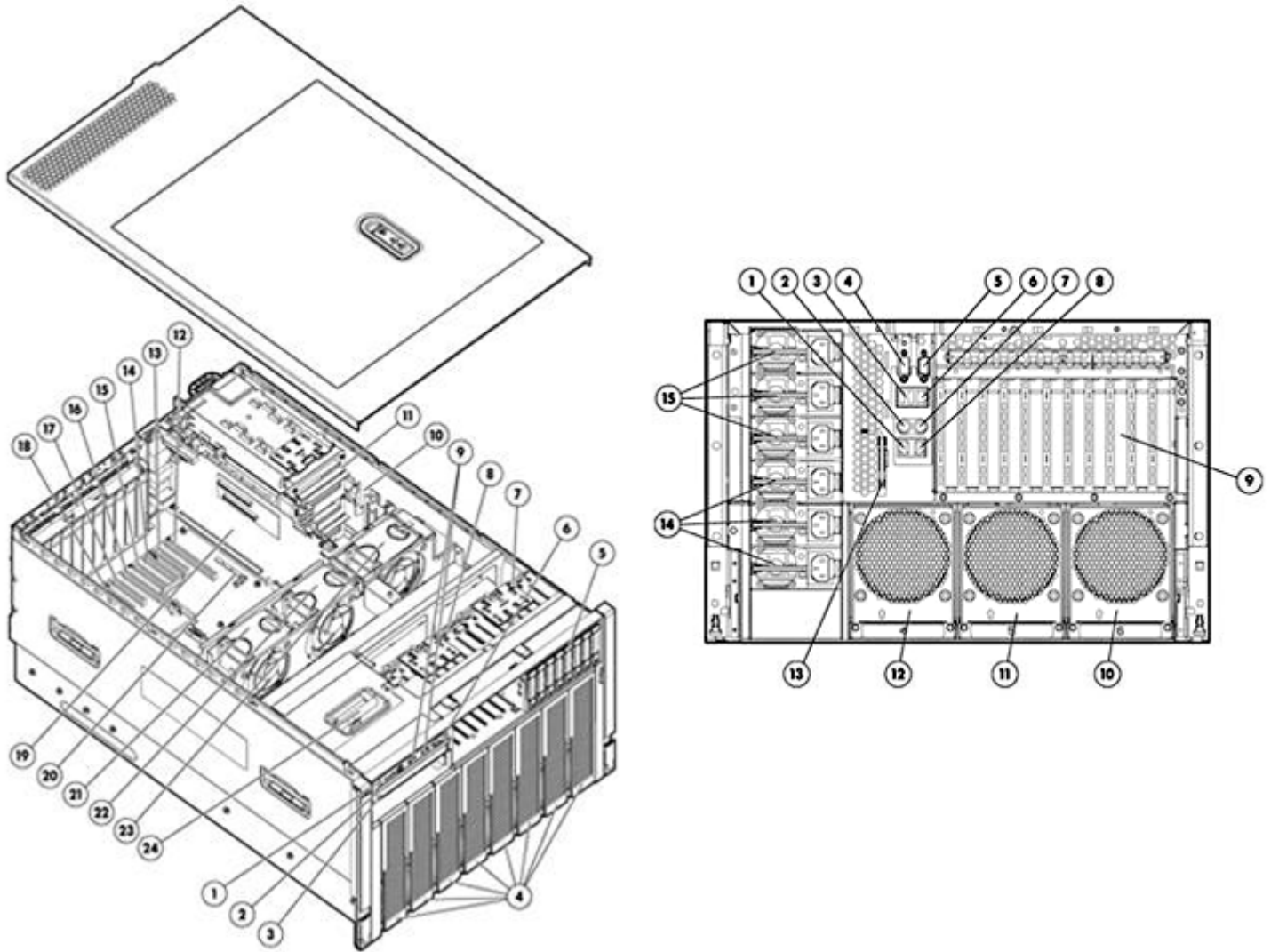
Front View:

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)

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

Overview

8.	SAS backplane (Optional)		10.	Fan 6
9.	USB Connectors		11.	Fan 5
10.	BBWC Battery Pack		12.	Fan 4
11.	Power Supply Backplane		13.	T-15 Torx screwdriver
12.	PCI-Express x8 non-hot-plug expansion slot 1		14.	Redundant power supply 4 - 6 (optional)
13.	PCI-Express x4 non-hot-plug expansion slot 2		15.	Power supply 1 - 3
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			

QuickSpecs

Standard Features

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

Processor Four or eight of the following depending on Model	**Quad-Core Processors** AMD Opteron™ Processor 8393 SE, Quad-Core (3.1 GHz, 105W ACP) 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 8378, Quad-Core (2.4 GHz, 75 W ACP) **NOTE:** Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: http://www.amd.com/powernow. **NOTE:** 4 or 8 supported.
Cache Memory One of the following depending on model	512 KB integrated level 2 cache per core 2 or 6 MB shared level 3 cache per processor (depends on model)
Chipset	Serverworks HT-2100 Northbridge and HT-1000 Southbridge chipset
Upgradeability	Supports up to 8 processors
Memory Protection	Advanced ECC

Memory One of the following depending on model	Type	PC2-5300 Registered DIMMs at 667 MHz 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) 64GB (16 x 4GB) (8393 SE Processor)
	Maximum	512GB (64 x 8GB)

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

Standard Features

Expansion Slots

NOTE: 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

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).

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

Standard Features

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

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).

Internal Storage Devices		
	Diskette Drive	None
	Optical Drive	Slimline DVD/CD-RW Drive Standard on all models - ejectable for security and serviceability
	Hard Drives	None ship standard
	Hard Drive Bays	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			
	Hot Plug SAS	8.000TB	16 x 500GB SFF SAS drives

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

NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

Standard Features

Industry Standard Compliance	ACPI 1.0a. Compliant PCI 2.2 Compliant PXE Support WOL Support Physical Address Extension (PAE) Support Microsoft® Logo certifications USB 2.0 Support
Server Power Cords	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.
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).

System Fans	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
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Microsoft Windows Server Hyper V Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware Citrix XenServer **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/DL785G5.
Graphics	Integrated ATI ES1000 with 32MB memory **Graphics Processing Unit** (GPU): Support for Nvidia FX5600 1.5GB PCIe

Standard Features

Form Factor	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

HP Insight management software	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: www.hp.com/go/foundation. The foundation pack includes: ● HP SmartStart ● HP Management DVD ● HP ProLiant Smart Update Firmware DVD SmartStart version supported (minimum): SmartStart 8.0 http://www.hp.com/servers/smartstart **NOTE:** In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.
	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: www.hp.com/go/iLO

Standard Features

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
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
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. **NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management software	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.
		Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol
		HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP 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.
		NOTE: For more information, visit: http://www.hp.com/go/insightdynamics

Optional Features

High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and Novell SLES, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler, the HP-MPI parallelization library, the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack

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

QuickSpecs

Optional Features

Factory Express Portfolio for Servers and Storage

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

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

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

HP Enterprise Configurator

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

Service and Support

Service and Support	HP 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

Pre-configured Models

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

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

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

NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

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

DL785G5 O3.1 GHz, 4P, 64GB,105W AM429A		
Processor(s)	(4) AMD Opteron™ Processor 8393 SE, Quad-Core (3.10 GHz, 105 Watts ACP)	
Cache Memory	512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor	
Memory	64 GB (16 x 4 GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB	
Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters	
Storage Controller	HP Smart Array P400i/512MB BBWC Controller	
Hard Drives	None ship standard	
Internal Storage	8.0TB max (16 x 500GB SAS)	
Optical Drive	Slimline CD-RW/DVD-ROM 24x Combo Drive	
Power Supply	(6) 910W/1300W Power Supplies standard	
Fans	6 Hot plug, redundant fans (individually removable)	
Integrated Lights Out	HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board	
Form Factor	Rack 7U	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

DL785G5 O2.9 GHz, 4P, 32GB, 75W AM430A		
Processor(s)	(4) AMD Opteron™ Processor 8389, Quad-Core (2.90 GHz, 75 Watts ACP)	
Cache Memory	512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor	
Memory	32 GB (8 x 4 GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB	
Network Controller	Two HP NC371i Multifunction Gigabit Network Adapters	
Storage Controller	HP Smart Array P400i/512MB BBWC Controller	
Hard Drives	None ship standard	
Internal Storage	8.0TB max (16 x 500GB SAS)	
Optical Drive	Slimline CD-RW/DVD-ROM 24x Combo Drive	
Power Supply	(3) 910W/1300W Power Supplies standard	
Fans	6 Hot plug, redundant fans (individually removable)	
Integrated Lights Out	HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board	
Form Factor	Rack 7U	
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.	

Pre-configured Models

DL785G5 O2.8 GHz, 4P, 32GB, 75W AM431A	**Processor(s)**	(4) AMD Opteron™ Processor 8387, Quad-Core (2.80 GHz, 75 Watts ACP)
	Cache Memory	512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor
	Memory	32 GB (8 x 4GB) of PC2-6400 DDR SDRAM (Standard) to 512 GB
	Network Controller	Two HP NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400i/512MB BBWC Controller
	Hard Drives	None ship standard
	Internal Storage	8.0TB max (16 x 500GB SAS)
	Optical Drive	Slimline CD-RW/DVD-ROM 24x Combo Drive
	Power Supply	(3) 910W/1300W Power Supplies standard
	Fans	6 Hot plug, redundant fans (individually removable)
	Integrated Lights Out	HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board
	Form Factor	Rack 7U
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

DL785G5 O2.4GHz, 4P, 16GB, 105W AM424A	**Processor(s)**	(4) AMD Opteron™ Processor 8378, Quad-Core (2.40 GHz, 75 Watts ACP)
	Cache Memory	512KB Integrated Level 2 Cache per Core 6MB Shared L3 Cache per processor
	Memory	16 GB (16 x 1 GB) of PC2-5300 DDR SDRAM (Standard) to 512 GB
	Network Controller	Two HP NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400i/512MB BBWC Controller
	Hard Drives	None ship standard
	Internal Storage	8.0TB max (16 x 500GB SAS)
	Optical Drive	Slimline CD-RW/DVD-ROM 24x Combo Drive
	Power Supply	Three 910W/1300W Power Supplies standard
	Fans	6 Hot plug, redundant fans (individually removable)
	Integrated Lights Out	HP Integrated Lights-Out 2 (iLO 2) management processor: Integrated on system board
	Form Factor	Rack 7U
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration

HP Models	HP ProLiant DL785 G5 Rack CTO Chassis	AH233A

Factory Integrated Models ship with:

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)

HP Processors	**NOTE:** If eight processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.	
	HP DL785 G5 AMD Opteron™ 8393SE (3.1GHz/4-core/105W) FIO 4-processor Kit	535674-L21
	HP DL785 G5 AMD Opteron™ 8389 (2.9GHz/4-core/75W) FIO 4-processor Kit	535675-L21
	HP DL785 G5 AMD Opteron™ 8387 (2.8GHz/4-core/75W) FIO 4-processor Kit	535676-L21
	HP DL785 G5 AMD Opteron™ 8381HE (2.5GHz/4-core/55W) FIO 4-processor Kit	535677-L21
	HP DL785 G5 AMD Opteron™ 8378 (2.4GHz/4-core/75W) FIO 4-processor Kit	508201-L21

HP Memory	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

Configuration Information - Factory Integrated Models

memory configurations will operate at PC2-5300 with 4 or fewer DIMMs and
PC2-4200 with 6 or more DIMMs.

HP Storage Controllers Optional Upgrades		
	HP Smart Array P400 256MB FIO Cache Module	405139-B21
	NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.	
	HP 512MB w/Battery Smart Array Battery Back Write Cache Enabler	405148-B21

HP Optical Drives	**NOTE:** Optical drives are ejectable.	
	HP Slimline CD-RW/DVD-ROM 24X Carbon Combo Drive	331903-B21
	HP 8X/24X SlimLine DVD-ROM Drive	264007-B21
	HP 8X Slim DVD+RW Drive	383975-B21

Step 3: Choose Additional Factory Integratable Options

HP Insight Software	HP Insight Control, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	582765-B21
	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A

Step 4: Choose Additional Options for Factory Integration

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

Core Options

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

HP Processors		
	HP DL785 G6 AMD Opteron™ 8439SE (2.80GHz/6-core/6MB/105W) Processor Kit	575261-B21
	HP DL785 G6 AMD Opteron™ 8431 (2.40GHz/6-core/6MB/75W) Processor Kit	575260-B21
	HP DL785 G6 AMD Opteron™ 8425HE (2.10GHz/6-core/6MB/55W) Processor Kit	575259-B21
	HP DL785 G5 AMD Opteron™ 8393SE (3.10GHz/4-core/6MB/105W) Processor Kit	535674-B21
	HP DL785 G5 AMD Opteron™ 8389 (2.90GHz/4-core/6MB/75W) Processor Kit	535675-B21
	HP DL785 G5 AMD Opteron™ 8387 (2.80GHz/4-core/6MB/75W) Processor Kit	535676-B21
	HP DL785 G5 AMD Opteron™ 8381HE (2.50GHz/4-core/6MB/55W) Processor Kit	535677-B21
	HP DL785 AMD Opteron™ 8376HE (2.30GHz/4-core/6MB/55W) Processor Kit	515101-B21
	HP DL785 G5 AMD Opteron™ 8384 (2.70GHz/4-core/6MB/75W) Processor Kit	507530-B21
	HP DL785 G5 AMD Opteron™ 8380 (2.50GHz/4-core/6MB/75W) Processor Kit	507528-B21
	HP DL785 G5 AMD Opteron™ 8378 (2.40GHz/4-core/6MB/75W) Processor Kit	508201-B21
	HP DL785 G5 AMD Opteron™ 8360SE (2.50GHz/4-core/2MB/105W) Processor Kit	468118-B21
	HP DL785 G5 AMD Opteron™ 8358SE (2.40GHz/4-core/2MB/105W) Processor Kit	468119-B21
	HP DL785 G5 AMD Opteron™ 8356 (2.30GHz/4-core/2MB/75W) Processor Kit	468120-B21
	HP DL785 G5 AMD Opteron™ 8354 (2.20GHz/4-core/2MB/75W) Processor Kit	468121-B21

Core Options

HP Memory	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.

HP Optical Drives	**NOTE:** Optical drives are ejectable.	
	HP Slimline CD-RW/DVD-ROM 24X Carbon Combo Drive	331903-B21
	HP 8X/24X SlimLine DVD-ROM Drive	264007-B21
	HP 8X Slim DVD+RW Drive	383975-B21

HP Hard Drives

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

Core Options

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

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

HP I/O Expansion Options	HP I/O PCI-e & HTx Backplane Upgrade Kit	AH262A

NOTE: I/O Backplane with 7 PCIe and 2 HTx slots.

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

Core Options

HP Power Supplies

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

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.

Power Options

HP High Power Graphics Card Cable Option	AH270A

NOTE: 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".

Additional Options

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

HP Insight Software	**HP Insight Control**	
	HP Insight Control, 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

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

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

Additional Options

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

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.

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

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High Performance Clusters

HP Cluster Management Utility

HP Cluster Management Utility Compute Node Flexible License	436284-B21

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

HP Cluster Management Utility License and Media	433257-B21

NOTE: Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required.

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

http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html

HP HPC Linux Value Pack

HP High Performance Computing Linux Value Pack 1 Processor Flexible License	TC293A

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

HP High Performance Computing Linux Value Pack Media Kit	TC294A

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

Additional Options

NOTE: For additional license kits please see the QuickSpecs at:
http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html

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

HP Storage Controllers	**SAS Controller**	
	Smart Array E500 Controller	
	HP Smart Array E500/256 2-ports Ext PCIe x8 SAS Controller	435129-B21
	Smart Array P400 Controller	
	HP Smart Array P400/256 2-ports Int PCIe x8 SAS Controller	405132-B21
	HP Smart Array P400 512MB Battery Kit	411064-B21
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC 2-ports Int/2-ports Ext PCIe x8 SAS Controller	381513-B21
	Smart Array P212 Controller	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	Smart Array P410 Controller	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller **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.	462864-B21
	HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
	HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
	Smart Array P411 Controller	
	HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
	HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
	HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
	HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
	Smart Array P812 Controller	
	HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller **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.	487204-B21
	Optional Upgrades	

Additional Options

HP Smart Array P400 Battery Attach 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.

HP 512MB w/Battery Smart Array Battery Back Write Cache Enabler 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).

HP Smart Array Cache Battery Kit 383280-B21
NOTE: For Smart Array P400 Controller only.
NOTE: 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).

HP 256MB P-series Cache Upgrade 462968-B21
NOTE: Supported on HP Smart Array P212 Controller only.

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

HP 650 mAh P-Series Battery 462969-B21
NOTE: Option kit not supported for factory integration.
NOTE: To enable BBWC on the 256MB cache.
NOTE: Supported on HP Smart Array P212 Controller, HP Smart Array P410 Controller, and HP Smart Array P411 Controller only.

HP 512MB Flash Backed Write Cache 534916-B21
NOTE: Option kit not supported for factory integration.
NOTE: Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.

HP 1GB Flash Backed Cache 534562-B21
NOTE: Option kit not supported for factory integration.
NOTE: Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.

HP DL785 Smart Array Controller cable option kit AM436A
NOTE: Option kit not supported for factory integration
NOTE: 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.

SAS Controller Options

HP DL785 SAS Expander cable option kit AM440A
NOTE: Option kit not supported for factory integration
NOTE: 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.

HP DL785 G5 SAS Option Kit AH267A
NOTE: 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.

Additional Options

NOTE: 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.

NOTE: 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.

NOTE: Please see the following Controller QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html (Smart Array E500 Controller)
http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html (Smart Array P400 Controller)
http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html (Smart Array P800 Controller)
http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller)
http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller)
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller)
http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html (SAS Expander Card)

SAS HBA

HP SC08Ge 2-ports Ext PCIe x8 SAS Host Bus Adapter	488765-B21
HP Modular Smart Array SC44Ge 1-ports Int/1-ports Ext PCIe x8 SAS Host Bus Adapter	416096-B21

NOTE: Please see the following QuickSpecs for additional information:
http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html (SC08Ge HBA)
http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA)

SCSI HBA

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

NOTE: Recommended HBA for SCSI tape drive connect.

Tape Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.

HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A

NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.

HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Tape Autoloader	AH558A

NOTE: Requires HP 1U Tape Autoloader Rack-Mount Kit (AH166A) for rack installation. Connection using HP Smart Array P212 Controller (462828-B21) recommended.

HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB drive	AG703A
HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A

Additional Options

DAT 320 SAS External Tape Drive	AJ828A
DAT 320 USB External Tape Drive	AJ823A
HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A
NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
HP StorageWorks Ultrium 448 SAS Internal	DW085A
HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A
NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
HP StorageWorks LTO-4 Ultrium 1760 Internal Tape Drive	EH919A
NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using the HP SC44Ge SAS Host Bus Adapter (416096-B21) recommended.	
HP StorageWorks LTO-4 Ultrium 1840 Internal Tape Drive	EH860A
NOTE: 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.	
HP StorageWorks LTO-5 Ultrium 3280 Internal Tape Drive	EH899A
NOTE: 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.	
HP MSL2024 0-Drive Tape Library	AK379A
HP MSL2024 1 LTO-4 Ultr 1760 SAS Library	AK378A
HP MSL2024 Ultr 920 SAS Tape Library	AH559A
HP MSL4048 0-Drive Tape Library	AK381A
HP MSL4048 2 LTO-4 Ultr 1760 SAS Library	AK380A
HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
HP StorageWorks MSL8048 0-Drive, 48 Slot Tape Library	AU300A
HP StorageWorks MSL8096 2 LTO-4 Ultrium 1760 SAS Tape Library	AK382A

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 D2D4112 Backup System **NOTE:** 12TB of Disk Storage	EH993A

HP StorageWorks RDX Removable Disk Backup Systems USB

HP StorageWorks RDX500 Internal Removable Disk Backup System **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.	AJ934A
HP StorageWorks RDX500 External Removable Disk Backup System	AJ935A
HP StorageWorks RDX750 Internal Removable Disk Backup System **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.	AW577A
HP StorageWorks RDX 1TB Internal Removable Disk Backup System **NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge.	BV847A

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 **NOTE:** Recommended HBA for MSL SCSI Tape Library connect.	AH627A

StorageWorks Converged Network Adapter

Additional Options

HP CN1000E 2P Converged Network Adapter	AW520A

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 (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	
	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	
	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	

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	
	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 (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	

Additional Options

> **NOTE:** For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.
>
> **NOTE:** For additional information on sizing your server, please reference: http://www.upssizer.com.
>
> **NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

HP Power Distribution Units

Monitored PDUs

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

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
HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)	252663-B21

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

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:

Additional Options

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.

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

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

10642 G2 (42U) Rack Cabinet - Pallet	AF001A
10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
HP 10642G2 1200mm deep Rack cabinet Shock Rack	AF092A
HP 10647G2 1200mm deep Rack cabinet Shock Rack	AF094A

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 (Worldwide)

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

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

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

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

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

HP Rack Options	**Keyboards and Monitors**

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A

Additional Options

HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html (Worldwide)

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12417_div/12417_div.html (Worldwide)

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

Additional Options

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: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12465_div/12465_div.html (Worldwide)

HP KVM Switch Options

USB Virtual Media, CAC Interface Adapter	AF623A
PS2/USB Virtual Media, CAC Interface Adapter, 1 pack	AF624A

NOTE: 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

NOTE: 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

NOTE: VT100 terminal emulation.

NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL:
http://www.hp.com/go/kvm.

HP 1x4 Server Switch	AF611A
PS2 Server Console Cable, 6 ft, 2 pack	AF612A
USB Server Console Cable, 6 ft, 2 pack	AF613A

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 Serial Console Server Options

HP 16 Port Serial Console Server (worldwide)	AF101A
HP 48 Port Serial Console Server (worldwide)	AF102A
Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A

Additional Options

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

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

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

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)

Memory

	2GB	2GB	2GB	2GB	Empty	Empty	Empty	Empty
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

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:

Memory

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

Example #3: Maximum Memory Configuration Maximum Memory (Standard replaced with Optional Memory) Total Memory = 512GB								
	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:

HP Memory

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
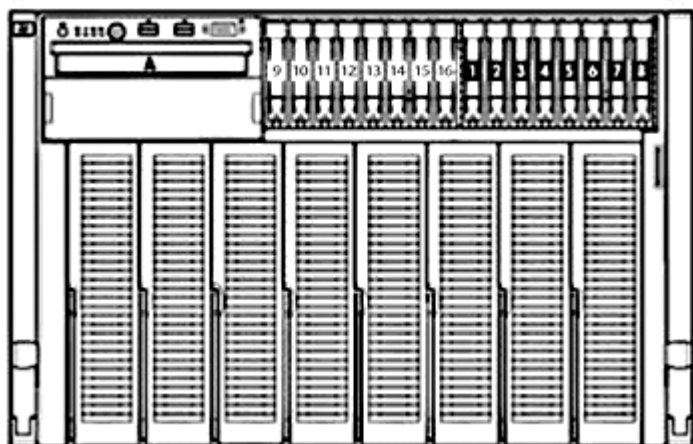
A   Slimline Media Bay

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
Ejectable Slimline Drives			
HP 8X/24X SlimLine DVD-ROM Drive	Up to 1	A	Integrated IDE
HP Slimline CD-RW/DVD-ROM 24X Carbon Combo Drive	Up to 1	A	Integrated IDE
HP 8X Slim DVD+RW 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
146GB 6G SAS 15K DP	Up to 8	9-16	HP Smart Array P400/256MB Controller
146GB 6G SAS 10K DP			HP Smart Array P400/512MB BBWC Controller
72GB 6G SAS 15K DP			HP Smart Array P800/512 BBWC Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP P812/1G Flash Backed Cache Controller

Storage

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

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

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
	Up to 8	9-16	HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP P812/1G Flash Backed Cache Controller
	Up to 16	1-16	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP P812/1G Flash Backed Cache Controller HP SAS Expander Card **NOTE:** SAS Expander card must be used with the HP Smart Array P410 Controller.

SATA Hot Plug SFF Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P400i Controller
	Up to 8	9-16	HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP P812/1G Flash Backed Cache Controller
	Up to 16	1-16	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC

Storage

HP Smart Array P410/1G with FBWC
HP P812/1G Flash Backed Cache Controller
HP SAS Expander Card
NOTE: SAS Expander card must be used with the HP Smart Array P410 Controller.

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller
	Up to 8		HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller
	Up to 4		HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

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.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives 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	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21

Storage

3U Rack-Mount Kit

HP StorageWorks USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives 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 Modular Smart Array SC44Ge 1-ports Int/1-ports Ext PCIe x8 SAS Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	416096-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks SCSI Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Modular Smart Array SC44Ge 1-ports Int/1-ports Ext PCIe x8 SAS Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	416096-B21
HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	N/A

Storage

MSL6000

HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 port	N/A
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 or 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

System Unit	**Dimensions** (H x W x D) 12.04 x 17.32 x 27.4 in (30.58 x 44 x 69.6cm) (with bezel)		
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	160lb (72 kg)
		Minimum (one hard drive, 2 power supply, and 4 processor modules installed)	147 lb (67 kg)
	Input Requirements (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
	BTU Rating	Maximum	8189 BTU/hr @ 100-120 VAC 9554 BTU/hr @ 200-240 VAC
	Power Specifications	**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 or www.hp.com/go/hppoweradvisor	
		● Click on the system of interest. Example: DL785 G5 ● Follow the instructions of the next screens	
	Power Supply Output (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)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 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).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non condensing.
	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed.

Technical Specifications

		Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min)
Acoustic Noise		Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

L WAd	7.6 B
L pAm	58 dBa

Operating

L WAd	7.6 B
L pAm	58 dBa

Emissions Classification (EMC)	**FCC Rating**	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

Slimline CD-RW/DVD-ROM 24X Combo Drive	**Shipping Dimensions**	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)		
	Shipping Weight	5 lb (2.27 kg)		
	Disk	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	
		Capacity	DVD-ROM	DVD-SL 4.7 GB/side
				DVD-DL 8.5 GB/side

Technical Specifications

		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)
	Block Size	DVD		2,048 bytes
		CD		2,352 (Mode-0)
				2352, 2340, 2336, 2048 bytes (Mode-1)
				2352, 2340, 2336, 2048 bytes (Mode-2)
	Diameter			120 mm, 80 mm (with adapter at vertical mounting mode)
Loading Mechanism	Tray type			
Interface	EIDE (ATAPI)			
Access Times (typical)	Random			DVD-ROM < 120 ms, CD-ROM < 110 ms
	Full-Stroke			DVD-ROM < 240 ms, CD-ROM < 160 ms
Audio Output Level (typical)	Line-out			CD 0.7 Vrms at 47 Kohms Load
Data Transfer Rate (sustained)	DVD-ROM	Single Layer		10.8 MB/sec. Max.
	DVD-RAM	2.77 MB/sec. Max		
	CD-ROM	7.2 MB/sec. Max.		
Cache Buffer	2 MB			
Spin-up Time (typical)	less than 10 seconds			
MTBF	120,000 Power On Hours (POH)			
Ambient Temperature	Operating	-22° to 140° F (-30° to 60° C)		
Relative Humidity	Operating	10% to 80%		
	Storage/Transportation	5% to 95%		
Dimensions	(HxWxD, maximum)	0.5 x 5.04 x 5.1 in (12.7 x 128 x 129.4 mm)		
Option Kit Contents	DVD-ROM drive with installation guide, warranty card, registration card			

HP Integrated Lights-Out 2 (iLO 2) integrated on system board	**Architecture**	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	Processor	32-bit RISC processor core running at 66 MHz
	Upgradeability	Option firmware upgradeable via flash ROM
	Video Support	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)
	Interfaces	One Ethernet network connection (10/100 Mb/s)

Technical Specifications

Memory	2-MB Flash ROM	
	8-MB SDRAM	
Operating System Support	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	
Client Browser Support	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)	
iLO 2 Standard Features	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	
iLO Advanced Features (optional)	Virtual Graphical Remote Console	
	Virtual Floppy/USB Key drive	
	Virtual CD-ROM drive	
	Directory Services Integration	
	Processor States Reporting	
	Terminal Services Integration	
	NOTE: For more information on how to purchase the HP iLO Advanced optional licensed features, visit the iLO QuickSpecs located: www.hp.com/go/iLO	

Technical Specifications

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

Two embedded NC371i Multifunction Gigabit Server Adapters	Network Interface	10/100/1000-T	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	BCM5706	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	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)

Technical Specifications

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.
		The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.