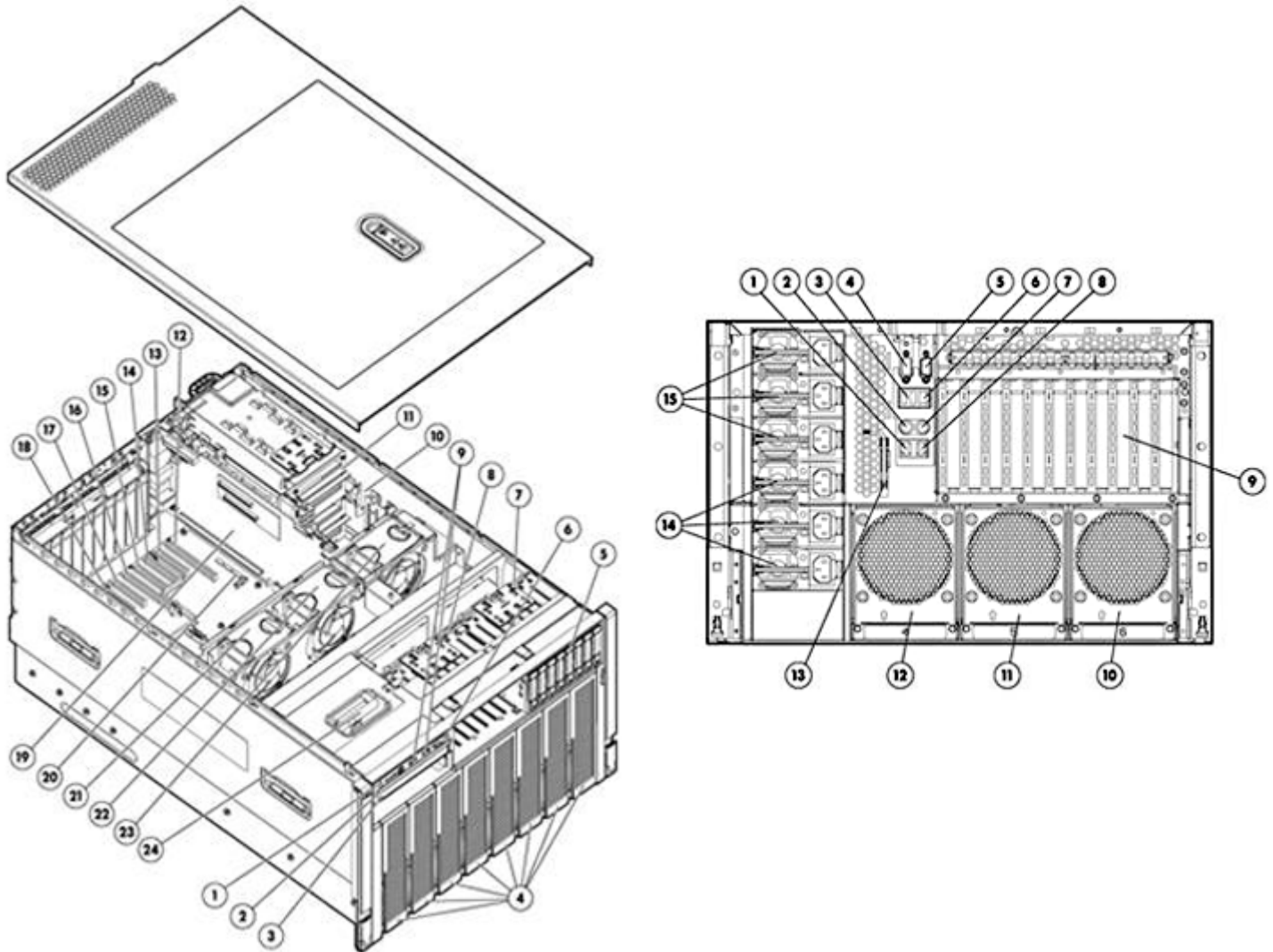


# QuickSpecs

## HP ProLiant DL785 Generation 6 (G6)

### Overview

Powered by latest AMD Opteron™ 6 Core Processors, the HP ProLiant DL785 G6, is the next generation server of the award winning HP ProLiant DL785 G5. HP ProLiant DL785 G6 is an 8 socket x86 server, supporting up to eight Six-Core AMD Opteron™ Processors, 512GB of memory, 11 PCI-e I/O slots or an optional I/O backplane with 7 PCI-e & 2 HTx I/O slots. With this highly expandable feature set, the DL785 G6 is an ideal choice for the growing enterprise class database, consolidation and virtualization environments seeking to improve server utilization and reduce server and virtualization 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)

#### Rear View:

1. NIC connector 1
2. Keyboard connector
3. USB connector
4. Video connector
5. Serial connector



### Overview

5. Eight bay Small Form Factor (SFF) Serial Attached SCSI (SAS) drive cage
  6. Video Connector
  7. SAS backplane (Standard)
  8. SAS backplane (Optional)
  9. USB Connectors
  10. BBWC Battery Pack
  11. Power Supply Backplane
  12. PCI-Express x8 non-hot-plug expansion slot 1
  13. PCI-Express x4 non-hot-plug expansion slot 2
  14. PCI-Express x4 non-hot-plug expansion slot 3
  15. PCI-Express x4 non-hot-plug expansion slot 4
  16. PCI-Express x16 non-hot-plug expansion slot 5
  17. PCI-Express x4 non-hot-plug expansion slot 6
  18. PCI-Express x4 non-hot-plug expansion slot 7
  19. Serial Peripheral Interface (SPI) Board
  20. System Maintenance Switch
  21. Fan 1
  22. Fan 2
  23. Fan 3
- Not shown: PCI-Express expansion slots 8 - 11
6. HP Integrated Lights-Out 2 (iLO2) connector
  7. Mouse connector
  8. NIC connector 2
  9. PCI Express expansion slots
  10. Fan 6
  11. Fan 5
  12. Fan 4
  13. T-15 Torx screwdriver
  14. Redundant power supply 4 - 6 (optional)
  15. Power supply 1 - 3



### Standard Features

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

<b>Processor</b> Four or eight of the following depending on Model	<b>Six-Core Processors</b> AMD Opteron™ Model 8439 (2.8 GHz, 6MB L3 cache, 105W ACP) AMD Opteron™ Model 8431 (2.4 GHz, 6MB L3 cache, 75W ACP) AMD Opteron™ Model 8425 (2.1 GHz, 6MB L3 cache, 55W ACP) <b>NOTE:</b> Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: <a href="http://www.amd.com/powernow">http://www.amd.com/powernow</a> . <b>NOTE:</b> 4 or 8 supported. <b>NOTE:</b> Up to 2.8GHz clock speed.
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<b>Cache Memory</b> One of the following depending on Model	512 KB Level 2 cache memory per core 6 MB Level 3 cache memory
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<b>Chipset</b>	Serverworks HT-2100 Northbridge and HT-1000 Southbridge chipset
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<b>Upgradeability</b>	Supports up to 8 processors
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<b>Memory Protection</b>	Advanced ECC
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<b>Memory</b> One of the following depending on Model	Type	REG PC2-5300 DIMMs (DDR2-667) REG PC2-6400 DIMMs (DDR2-800)
	Standard PC2-6400	64 GB (16 x 4 GB) 32 GB (8 x 4 GB)
	Maximum	512 GB (64 x 8 GB)
	<b>NOTE:</b> Support of low-power or regular PC2-5300 or PC2-6400 registered DIMMs.	

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

I/O backplane with 11 PCIe slots	Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
	1	PCIe	x8	x16	4	Full-size	
	2	PCIe	x4	x8	7	Full-size	
	3	PCIe	x4	x8	10	Full-size	
	4	PCIe	x4	x8	13	Full-size	
	5	PCIe	x16	x16	65	Full-size	



### Standard Features

6	PCIe	x4	x8	68	Full-size
7	PCIe	x4	x8	71	Full-size
8	PCIe	x16	x16	129	Full-size
9	PCIe	x8	x16	132	Full-size
10	PCIe	x16	x16	193	Full-size
11	PCIe	x8	x16	196	Full-size

**NOTE:** Bus Number - Default bus assignment (in Decimal format). Inserting cards with PCI bridges may alter the actual bus assignment number

**NOTE:** Bus Width - Indicates the number of physical electrical lanes running to the connector

**NOTE:** All slots are non-hot-plug Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number. Slots are enumerated differently based on the operating system.

Microsoft operating systems enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

**NOTE:** 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 G6 with backplane that has (2) HTx slots and (7) PCI-Express slots.

I/O backplane with 7 PCIe & 2 HTx slots

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number	Form Factor	Notes
1	PCIe	x8	x16	4	Full-size	
2	PCIe	x4	x8	7	Full-size	
3	PCIe	x4	x8	10	Full-size	
4	PCIe	x4	x8	13	Full-size	
5	PCIe	x16	x16	65	Full-size	
6	PCIe	x4	x8	68	Full-size	
7	PCIe	x4	x8	71	Full-size	
8	HTx		N/A	128	Full-Height/Full-Length	No Slot
10	HTx	x16	N/A	192	Full-Height/Full-Length	No Slot

**NOTE:** Bus Number - Default bus assignment (in Decimal format). Inserting cards with PCI bridges may alter the actual bus assignment number

**NOTE:** Bus Width - Indicates the number of physical electrical lanes running to the connector

**NOTE:** All slots are non-hot-plug Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number. Slots are enumerated differently based on the operating system.

Microsoft operating systems enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

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

**NOTE:** VMware is not supported on DL785 G6 with backplane that has (2) HTx slots and (7) PCI-Express slots



### Standard Features

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<b>Storage Controllers</b>	All Models	HP Smart Array P400i Controller
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Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), 512MB, 1G with FBWC, and Smart Array Advanced Pack (SAAP).

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

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<b>Maximum Internal Storage Type</b>	Hot Plug SAS	8.0TB	16 x 500GB SFF SAS drives
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<b>Interfaces</b>	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front, 1 rear
	Keyboard	1
	USB 2.0 Ports	2 front, 2 rear, 1 internal
	<b>NOTE:</b> Please see the following URL for additional information regarding USB support: <a href="http://h18004.www1.hp.com/products/servers/platforms/usb-support.html">http://h18004.www1.hp.com/products/servers/platforms/usb-support.html</a> .	
	iLO 2 remote management port	1
Network RJ-45	2	

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<b>Industry Standard Compliance</b>	ACPI V2.0 Compliant PCIe 1.1 Compliant PXE Support WOL Support (with embedded NC371i Multifunction Gigabit Network Adapters) Physical Address Extension (PAE) Support Microsoft® Logo certifications USB 2.0 Support
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<b>Server Power Cords</b>	<b>NOTE:</b> The HP ProLiant DL785 G6 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: <a href="http://www.hp.com/go/powercordmatrix">http://www.hp.com/go/powercordmatrix</a> .
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### Standard Features

<b>Power Supply</b> One of the following depending on Model	1200 Watts- High Efficiency Power Supply (Redundant Hot Plug, Autoswitching), CSCI 2007/2008 <b>NOTE:</b> Three Hot Plug Power Supplies ship standard with the AM439A sku. Three optional power supplies may be added for redundancy. <b>NOTE:</b> Six Hot Plug Power Supplies ship standard with the AM438A sku (the 4th, 5th and 6th power supplies are for redundancy).
<b>System Fans</b>	6 Hot plug, redundant fans <b>NOTE:</b> Fans are N+1 hot plug redundant and individually removable.
<b>Required Cabling</b>	For required cabling information, refer to the HP Web site at: <a href="http://www.hp.com/servers/dl785">www.hp.com/servers/dl785</a>
<b>Operating Systems and Virtualization Software Support for ProLiant Servers</b>	<a href="#">Microsoft Windows Server</a> Microsoft Windows Server Hyper-V <a href="#">Red Hat Enterprise Linux (RHEL)</a> <a href="#">SUSE Linux Enterprise Server (SLES)</a> Solaris VMware <a href="#">HP Citrix Essentials for XenServer</a> <b>NOTE:</b> For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: <a href="http://www.hp.com/go/ossupport">http://www.hp.com/go/ossupport</a> and our driver download page <a href="http://www.hp.com/support/DL785G5">www.hp.com/support/DL785G5</a> .
<b>Graphics</b>	Integrated ATI ES1000, 32MB video standard
<b>Form Factor</b>	Rack (7U = 12.25 inches), ships with sliding rails and cable management system Space saving form factor (7U) provides space efficiencies while providing maximum deployment flexibility
<b>HP Insight Management Control Software</b>	<p>HP Insight Foundation</p> <p>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.</p> <p>HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: <a href="http://www.hp.com/go/foundation">http://www.hp.com/go/foundation</a>.</p> <p>The foundation pack includes:</p> <ul style="list-style-type: none"><li>● HP SmartStart</li><li>● HP Management DVD</li><li>● HP ProLiant Smart Update Firmware DVD</li></ul> <p>SmartStart version supported (minimum): SmartStart 8.30 <a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a></p>



### Standard Features

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**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.

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

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**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

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**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

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### Standard Features

#### Warranty

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

**NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>





### Optional Features

#### HP Insight Management Software    HP Insight Control

HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.

Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See [www.hp.com/go/insightcontrol](http://www.hp.com/go/insightcontrol)

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: <http://www.hp.com/services/insight>.

#### HP Insight Dynamics

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. <a href="http://www.hp.com/go/clusters">http://www.hp.com/go/clusters</a> .
	HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. <a href="http://www.hp.com/techservers/clusters/ucp/index.html">http://www.hp.com/techservers/clusters/ucp/index.html</a>
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. <a href="http://www.hp.com/go/cmu">http://www.hp.com/go/cmu</a>
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform 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. <a href="#">HP HPC Linux Value Pack</a>

### Solutions

The very scalable 8-socket x86 ProLiant DL785 G6, 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 G6 would be excellent for running the following types of applications:

#### Typical Usage:

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



### Optional Features

#### Factory Express Portfolio for Servers and Storage

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

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

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

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#### HP 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. For additional information please visit: <http://www.hp.com/products/configurator>



### Service and Support

#### 700 Series Servers

#### Service and Support

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

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

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

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

##### **HP Technology Services meets business challenges with services offered in three packages -**

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

#### **Optimized Care Package Supports maintaining servers at optimum performance availability**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner  
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

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

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

##### **3-Year HP Critical Advantage**

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

##### **Additional Services: Data Center Transformation Services**

#### **Standard Care Package Package that maintains high level of server availability**

##### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner  
<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

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

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

##### **3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service**

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the



### Service and Support

system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf>

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

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

**Additional Services:** Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); Microsoft or Linux or VMware education courses; +60 Proactive Select Credits

### Basic Care Package

**Delivers minimum recommended support service level**

#### **HP ProLiant Server Hardware Installation**

Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN>

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

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

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

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf>

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

Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf>

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

### Insight Remote Support

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

### For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant>



### Pre-configured Models

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

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

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

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

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

### Performance Models

<b>HP ProLiant DL785 G6 8439SE 2.8GHz Six Core 4P 64GB ICE Rack Server AM438A</b>	<b>Processor</b>	6 Core AMD Opteron™ 8400 Series Processors
	<b>Cache Memory</b>	6MB shared L3 cache per processor
	<b>Memory</b>	64GB (16 X 4GB) of PC2-6400 DDR SDRAM standard
	<b>Network Controller</b>	Two embedded NC371i Multifunction Gigabit Network Adapters
	<b>Storage Controller</b>	HP Smart Array P400i/512MB BBWC Controller
	<b>Hard Drive</b>	None
	<b>Internal Storage</b>	8.0 TB max
	<b>Optical Drive</b>	Slimline CD-RW/DVD-ROM 24x Combo Drive
	<b>Power Supply</b>	Six 1200W Power Supplies standard
	<b>Fans</b>	6 Hot plug, redundant fans
	<b>Insight Control</b>	HP Insight Control Environment No Media single server license, including 1 year of 24x7 Technical Support and Updates
	<b>Form Factor</b>	7U
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

### Base Models

<b>HP ProLiant DL785 G6 8431 2.4GHz Six Core 4P 32GB Rack Server AM439A</b>	<b>Processor</b>	6 Core AMD Opteron™ 8400 Series Processors
	<b>Cache Memory</b>	6MB shared L3 cache per processor
	<b>Memory</b>	32GB (8 X 4GB) of PC2-6400 DDR SDRAM standard
	<b>Network Controller</b>	Two embedded NC371i Multifunction Gigabit Network Adapters
	<b>Storage Controller</b>	HP Smart Array P400i/512MB BBWC Controller
	<b>Hard Drive</b>	None
	<b>Internal Storage</b>	8.0 TB max
	<b>Optical Drive</b>	Slimline CD-RW/DVD-ROM 24x Combo Drive
	<b>Power Supply</b>	Three 1200W Power Supplies standard
	<b>Fans</b>	6 Hot plug, redundant fans
	<b>Form Factor</b>	7U
	<b>Warranty</b>	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.



### Configuration Information

**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 G6 Configure-to-order Rack Server	AM437A
	<b>Factory Integrated Models ship with:</b>	
	Two embedded NC371i Multifunction Gigabit Network Adapters	
	HP Smart Array P400i Controller	
	HP Integrated Lights-Out 2 (iLO 2) management processor management	
	Six (6) Redundant Hot Plug Fans	
	Three Hot Plug Power Supply	
	Rack 7U Form Factor	

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

HP Processors	<b>NOTE:</b> If eight processors are desired, select one xxxxx-L21 and one xxxxx-B21.	
	AMD Opteron™ 8439 SE six-core processor (2.8GHz, 105W ACP) 4P Option Kit, FIO	575261-L21
	AMD Opteron™ 8431 six-core processor (2.4GHz, 75W ACP) 4P Option Kit, FIO	575260-L21
	AMD Opteron™ 8425 HE six-core processor (2.1GHz, 55W ACP) 4P Option Kit, FIO	575259-L21

HP Memory	4 GB REG PC2-6400 2 x 2 GB Kit	497765-B21
	8 GB REG PC2-6400 2 x 4 GB Kit	497767-B21
	8 GB REG PC2-6400 2 x 4 GB Low Power Kit	504351-B21
	4 GB REG PC2-5300 2 x 2 GB Low Power Single Rank Kit	483401-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 only 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 Storage Controllers	<b>Upgrade Options</b>	
	HP Smart Array P400 256MB FIO Cache Module	405139-B21
	<b>NOTE:</b> Supports Smart Array P400 Controller and Smart Array P400i Controller only.	
	HP 512MB w/Battery Smart Array Battery Back Write Cache Enabler	405148-B21



### Configuration Information

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

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### Step 3: Choose Additional Factory Integratable Options

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

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### Step 4: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Core Options" and "Additional Options" sections 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 Processor	6-Core 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 Memory		
	HP 2GB (2x1GB) Single Rank PC2-5300 (DDR2-667) Registered Low Power Memory Kit	483399-B21
	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-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

**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 only 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 Drive Cage Options	HP DL785 G5 SAS Drive Option	AH267A
	<b>NOTE:</b> The SAS Option Kit enables the second drive cage to support an additional eight SFF SAS hard disk drives, for a total internal support of sixteen SFF SAS hard disk drives.	
	<b>NOTE:</b> When choosing the HP DL785 G5 SAS Option Kit, customer must also order one of the following Smart Array Controllers: HP Smart Array P400 Controller, HP Smart Array P800 Controller, HP Smart Array P812 Controller, or the HP Smart Array P410 Controller.	
	<b>NOTE:</b> The SAS Option Kit enables the second drive cage to support an additional eight SFF SAS hard disk drives, for a total internal support of sixteen SFF SAS hard disk drives.	

HP Optical Drives		
	HP 8X Slim DVD+RW Drive	383975-B21
	HP 8X/24X SlimLine DVD-ROM Drive	264007-B21
	HP Slimline CD-RW/DVD-ROM 24X Carbon Combo Drive	331903-B21



### Core Options

#### HP Hard Drives

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

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

**NOTE:** SAS Enterprise drives have a 3 year warranty, while SAS Midline drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

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

HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 581286-B21

HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive 581284-B21

HP 300GB 6G SAS 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 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive 605835-B21

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

**NOTE:** SAS Enterprise drives have a 3 year warranty, while SAS Midline drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information:

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

##### Solid State Drive (SSD)

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.pdf](http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.pdf)

**NOTE:** HP P410/256 Smart Array Controller or HP SAS Expander Card must be used for adding the SATA Hot Plug Midline (MDL) solid state drives as internal drives in HP ProLiant DL785 G6.

**NOTE:** SAS Expander card must be used with the HP Smart Array P410 Controller.

**NOTE:** SATA Hot Plug Midline (MDL) solid state drives are not supported for factory integration.



### Core Options

#### HP Networking

##### Gigabit Ethernet adapters

HP NC112T PCI Express Gigabit Server Adapter 503746-B21

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

HP NC364T PCI-E 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 NC365T 4-port Ethernet Server Adapter 593722-B21

HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter 394793-B21

HP NC373T PCI-E Multifunction Gigabit Server Adapter 394791-B21

HP NC375T PCI Express Quad Port Gigabit Server Adapter 538696-B21

##### 10 Gigabit Ethernet adapters

HP NC522SFP Dual Port 10GbE Gigabit Server Adapter 468332-B21

HP NC550SFP Dual Port 10GbE Server Adapter 581201-B21

**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

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: [www.hp.com/go/ProLiantNICs](http://www.hp.com/go/ProLiantNICs).

#### HP InfiniBand Options

HP InfiniBand 4X DDR PCI-E Dual Port HCA 448397-B21

#### HP I/O Expansion Options

HP DL785 G5 I/O PCI-e and HTx Backplane Upgrade Kit AH262A

#### HP Power Supplies

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

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

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

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



### Additional Options

#### HP Insight Software

#### HP Insight Control

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

HP Insight Software Media Kit 436222-B21

**NOTE:** Insight Software DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Environment suite. Uses an integrated installer to perform quick and accurate software installation and updates.

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

HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License T9074BAE

**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 Kits, please see the QuickSpecs at:

[http://h18000.www1.hp.com/products/quickspecs/12631\\_div/12631\\_div.html](http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html)

#### HP Insight Control for Linux

HP Insight Control for Linux Media Kit TC208A

**NOTE:** This optional Media pack DVD contains the ISO image for HP Insight Control for Linux, HP System Insight Manager, HP Insight Power Manager, HP Virtual Machine Management Pack, and an integrated installer. Servers must be acquired separately.

**NOTE:** This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: <http://www.hp.com/go/ice-linux> (click on Download button).

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

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

**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:** For additional License Kits, please see the QuickSpecs at:

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

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

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

**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



### Additional Options

order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service.

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

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

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

<b>High Performance Clusters</b>	HP Cluster Management Utility	AH267A
	HP Cluster Management Utility License and Media	433257-B21
	HP Cluster Management Utility Compute Node Flexible License	QL803A
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License	TC293B
	HP High Performance Computing Linux Value Pack Media Kit	TC294A

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

<b>HP Storage Controllers</b>	<b>SAS Controllers</b>	
	<b>Smart Array E500 Controller</b>	
	HP Smart Array E500/256 2-ports Ext PCIe x8 SAS Controller	435129-B21
	<b>Smart Array P400 Controller</b>	
	HP Smart Array P400 512MB Battery Kit	411064-B21
	HP Smart Array P400/256 2-ports Int PCIe x8 SAS Controller	405132-B21
	<b>NOTE:</b> 405132-B21 comes with 256 MB Cache.	
	<b>HP Smart Array P800 Controller</b>	
	HP Smart Array P800/512 BBWC 2-ports Int/2-ports Ext PCIe x8 SAS Controller	381513-B21
	<b>Smart Array P212 Controller</b>	
	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
	<b>Smart Array P410 Controller</b>	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21	
HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21	



### Additional Options

**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.

#### Smart Array P411 Controller

HP Smart Array P411/256 MB Controller	462830-B21
HP Smart Array P411/512 MB BBWC Controller	462832-B21
HP P411 with 512MB Flash Backed Cache Controller	578229-B21
HP P411 with 1GB Flash Backed Cache Controller	572531-B21

#### Smart Array P812 Controller

HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	487204-B21
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**NOTE:** AM436A HP DL785 Smart Array Controller cable option kit is required each time the Smart Array P812 Controller is ordered without factory integration and will be used to control internal drives 9-16.

#### Optional Upgrades

HP Smart Array P400 Battery Attach Kit	417836-B21
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**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. 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
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**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
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**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
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**NOTE:** Option kit not supported for factory integration.

**NOTE:** Supported on HP Smart Array P212 Controller and P410 Controller only.

HP 512MB P-Series Battery Backed Write Cache Upgrade	462967-B21
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**NOTE:** Option kit not supported for factory integration.

**NOTE:** Supported on HP Smart Array P212 Controller and P410 Controller only.

HP 650 mAh P-Series Battery	462969-B21
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**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
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HP 1GB Flash Backed Cache	534562-B21
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**NOTE:** Option kit not supported for factory integration.

**NOTE:** Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.



### Additional Options

HP 8484 to Mini SAS 33in Cable Assembly	591734-B21
<b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html">http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html</a> (Smart Array E500 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html">http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html</a> (Smart Array P400 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html">http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html</a> (Smart Array P800 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html">http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html</a> (Smart Array P212 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html">http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html</a> (Smart Array P410 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html">http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html</a> (Smart Array P411 Controller) <a href="http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html">http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html</a> (Smart Array P812 Controller)	
<b>SAS Controller Options</b>	
HP 24 Bay 3Gb SAS Expander Card	468406-B21
<b>NOTE:</b> Option kit not supported for factory integration. <b>NOTE:</b> Enables a single Smart Array P410 Controller to control all of the embedded HDD's. Allows the configuration of a RAID array with up to 16 embedded HDD's. The Controller must be installed in PCIe Slot 1 and the Expander in PCIe Slot 2. The embedded SA P400i controller is not used. <b>NOTE:</b> AM440A HP DL785 SAS Expander cable option kit required. <b>NOTE:</b> Requires SA P410 Controller with Cache memory. <b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html">http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html</a> (SAS Expander Card)	
HP DL785 G6 SAS Expander Cable Option Kit	AM440A
<b>NOTE:</b> Option kit not supported for factory integration <b>NOTE:</b> Required each time the 468406-B21 HP SAS Expander card is ordered. Provides (6) cables to connect the Smart Array Controller to the Expander, and the Expander to the Primary and Optional SAS backplanes. The SAS cables provided with the DL785 and the Expander are not used.	
<b>SAS HBA</b>	
HP SC08Ge 2-ports Ext PCIe x8 SAS Host Bus Adapter	488765-B21
<b>NOTE:</b> Please see the following QuickSpecs for additional information: <a href="http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html">http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html</a> (SC08Ge HBA)	
HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter	614988-B21
<b>SCSI HBA</b>	
HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21



### Additional Options

HP Cable Options	HP High Power Graphics Card Cable	AH270A
	<b>NOTE:</b> High Line Voltage is required with this kit. Using Low Line Voltage will halt the system. However if the total power usage is validated using the HP Power Advisor, 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".	
	HP DL785 G6 Smart Array Controller Cable Option Kit	AM436A
	<b>NOTE:</b> Option kit not supported for factory integration	
	<b>NOTE:</b> Supports internal connection of Smart Array P410 and P812 Controllers. Provides (2) cables to connect the Controller to the Optional SAS Backplane (HP DL785 G5 SAS Option Kit - AH267A). This is required each time one of the Smart Array P410 and P812 Controllers is ordered without factory integration and will be used to control internal drives 9-16.	
HP Tape Backup	<b>Tape Autoloaders</b>	
	<b>HP StorageWorks 1/8 G2 Tape Autoloader</b>	
	HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
	HP P212 Smart Array Controller SAS (462828-B21) is recommended for a dedicated HBA for SAS tape connection	
	<b>Tape Libraries</b>	
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A
	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1760 SAS Tape Library	AK382A
HP Disk Backup	<b>D2D Backup</b>	
	HP StorageWorks D2D2504i Backup System	EJ002A
	HP StorageWorks D2D4112 Backup System	EH993A
	HP StorageWorks D2D4009i Backup System	EH939A
	<b>HP StorageWorks RDX Removable Disk Backup Systems USB</b>	
	HP StorageWorks RDX 1TB Internal Removable Disk Backup System	BV847A
	<b>NOTE:</b> 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.	





### Additional Options

#### HP StorageWorks Options

**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 PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A
HP StorageWorks 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
HP StorageWorks 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter	AP767A
HP StorageWorks 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter	AP768A

#### Emulex Fibre Channel HBAs

HP StorageWorks 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
HP StorageWorks 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
HP StorageWorks FC2142SR 4Gb PCIe Host Bus Adapter	A8002A
HP StorageWorks FC2242SR 4Gb PCIe DC Host Bus Adapter	A8003A

#### QLogic Fibre Channel HBAs

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

#### StorageWorks SCSI HBA

HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter	AH627A
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#### HP Disk Storage Systems

##### MSA Drive Enclosures

HP StorageWorks MSA60 Array	418408-B21
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**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

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

HP StorageWorks MSA70 Array	418800-B21
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**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

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

HP 2012sa Single Controller Modular Smart Array	AJ752A
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HP 2012sa Dual Controller Modular Smart Array	AJ753A
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**NOTE:** Please see QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/13045\\_div/13045\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html)

##### Disk Enclosures

HP StorageWorks D2600 Disk Enclosure	AJ940A
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HP StorageWorks D2700 Disk Enclosure	AJ941A
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**NOTE:** Please see the QuickSpecs for additional options and configuration information at:

[http://h18000.www1.hp.com/products/quickspecs/13044\\_div/13044\\_div.html](http://h18000.www1.hp.com/products/quickspecs/13044_div/13044_div.html)



### Additional Options

<b>HP Uninterruptible Power Systems</b>	<b>HP Rack-mountable UPS</b>	
	<b>HP R1500 G2 UPS</b>	
	HP R1500 G2 1440VA Low Voltage NA 1U Rackmount Uninterruptible Power System	AF419A
	HP R1500 G2 1440VA INTL 1U Rackmount Uninterruptible Power System	AF418A
	HP R1500 G2 1200kVA Low Voltage JP 1U Rackmount Uninterruptible Power System	AF421A
	<b>NOTE:</b> Please see the <a href="http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html">QuickSpecs</a> for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html">http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html</a>	
	<b>HP R3000 UPS</b>	
	HP R/T3000 3300VA INTL 2U Rackmount Uninterruptible Power System	AF454A
	HP R/T3000 3300VA High Voltage NA/JPN 2U Rackmount Uninterruptible Power System	AF453A
	<b>NOTE:</b> Please see the <a href="http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html">QuickSpecs</a> for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html">http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html</a>	
	<b>HP Rack-Mountable R5500 UPS</b>	
	HP R5500 VA 3U INT Uninterruptible Power System	AF416A
	HP R5500 VA 3U NA/JP Uninterruptible Power System	AF426A
	<b>NOTE:</b> Please see the <a href="http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html">QuickSpecs</a> for additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html">http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html</a>	
	<b>NOTE:</b> For additional information on HP Uninterruptible Power Systems please go to: <a href="http://www.hp.com/servers/rackups">www.hp.com/servers/rackups</a> .	
	<b>NOTE:</b> 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: <a href="http://www.hp.com/products/powercords">www.hp.com/products/powercords</a> .	

<b>HP Power Distribution Units</b>	<b>Monitored PDUs</b>	
	<b>HP Monitored Power Distribution Unit: Full Rack Version</b>	
	HP Single Input 3 Phase 24A Monitored Power Distribution Unit	AF504A
	HP Single Input 1 Phase 40A Monitored Power Distribution Unit	AF506A
	HP Single Input 3 Phase 16A Monitored Power Distribution Unit	AF508A
	HP Single Input 1 Phase 32A INT Monitored Power Distribution Unit	AF510A
	<b>HP Monitored Power Distribution Unit: Half Rack Version</b>	
	HP Single Input 1 Phase 24A Monitored Power Distribution Unit	AF914A
	HP Single Input 1 Phase 32A Monitored Power Distribution Unit	AF915A
	<b>Modular PDUs</b>	
	HP 24A High Voltage Modular Power Distribution Unit	252663-D72
	HP 16A High Voltage Modular Power Distribution Unit	252663-B24
	<b>NOTE:</b> This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	HP 32A High Voltage Modular Power Distribution Unit	252663-B31
	HP 40A High Voltage Modular Power Distribution Unit	252663-D73
	<b>NOTE:</b> Please see the following <a href="#">Modular Power Distribution Unit (Zero-U/1U Modular PDUs)</a> 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](http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html)  
(Worldwide)

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

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

#### HP Rack Series

##### Rack 10000 G2 Series

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

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

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

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

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

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

**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 BE Monitor	AZ881A
HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor	AZ876A
HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor	AZ873A
HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor	AZ884A
HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor	AZ872A



### Additional Options

HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor	AZ874A
HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor	AZ882A
HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor	AZ877A
HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor	AZ880A
HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor	AZ883A
HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor	AZ878A
HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor	AZ875A
HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor	AZ879A
HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor	AZ871A
HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

**NOTE:** Please see the [QuickSpecs for Technical Specifications and additional information:](#)

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

HP TFT7600 Rackmount Keyboard 17in US Monitor	AG052A
HP TFT7600 Rackmount Keyboard 17in UK Monitor	AG053A
HP TFT7600 Rackmount Keyboard 17in DE Monitor	AG054A
HP TFT7600 Rackmount Keyboard 17in FR Monitor	AG055A
HP TFT7600 Rackmount Keyboard 17in IT Monitor	AG056A
HP TFT7600 Rackmount Keyboard 17in ES Monitor	AG057A
HP TFT7600 Rackmount Keyboard 17in DK Monitor	AG058A
HP TFT7600 Rackmount Keyboard 17in NO Monitor	AG059A
HP TFT7600 Rackmount Keyboard 17in SE/FI Monitor	AG060A
HP TFT7600 Rackmount Keyboard 17in CH Monitor	AG061A
HP TFT7600 Rackmount Keyboard 17in PT Monitor	AG062A
HP TFT7600 Rackmount Keyboard 17in BE Monitor	AG063A
HP TFT7600 Rackmount Keyboard 17in JP Monitor	AG064A
HP TFT7600 Rackmount Keyboard 17in RU Monitor	AG065A
HP TFT7600 Rackmount Keyboard 17in Intl Monitor	AG066A
HP TAA TFT7600 Rackmount Keyboard 17in US 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](http://h18000.www1.hp.com/products/quickspecs/12417_div/12417_div.html)  
(Worldwide)

HP 1U US Rackmount Keyboard with USB	AG072A
HP 1U UK Rackmount Keyboard with USB	AG073A
HP 1U DE Rackmount Keyboard with USB	AG074A
HP 1U IT Rackmount Keyboard with USB	AG076A
HP 1U BE Rackmount Keyboard with USB	AG083A
HP 1U DK Rackmount Keyboard with USB	AG078A
HP 1U FR Rackmount Keyboard with USB	AG075A
HP 1U INT Rackmount Keyboard with USB	AG086A



### Additional Options

HP 1U NO Rackmount Keyboard with USB	AG079A
HP 1U PT Rackmount Keyboard with USB	AG082A
HP 1U RU Rackmount Keyboard with USB	AG085A
HP 1U SE/FI Rackmount Keyboard with USB	AG080A
HP 1U ES Rackmount Keyboard with USB	AG077A
HP 1U Rackmount Keyboard with USB	AG081A
HP 1U JP Rackmount Keyboard with USB	AG084A

**NOTE:** Please see the [QuickSpecs for Technical Specifications and additional information:](#)

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

#### HP KVM Switch Options

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

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HP USB and SD Options	HP 1.44MB USB External Floppy Drive	DC141B
	HP 2GB USB Flash Media Drive Key Kit	608447-B21
<b>NOTE:</b> HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to <a href="#">HP VMware Getting Started Guide</a> for installation instructions.		
	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB Standard Keyboard US	DT528A#ABA

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### Additional Options

HP Care Pack Services	<b>Hardware Services On-site Service</b>	
	HP 3 year 4 hour 13x5 ProLiant DL785 G6 Server Hardware Support	US137E
	HP 3 year 4 hour 24x7 ProLiant DL785 G6 Server Hardware Support	US139E
	<b>Hardware Services 6-Hour Call to Repair On-site Service</b>	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL785 G6 Server Hardware Support	US141E
	<b>Installation &amp; Start-up Services</b>	
	HP Install ProLiant DL785 Service	UM450E
	HP Startup ProLiant DL785 / DL980 Service	UM451E
	Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	
	<b>Support Plus 24</b>	
	HP 3 year Support Plus 24 for Microsoft OS for ProLiant DL785 G6 Service 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	US143E
HP 3 year Support Plus 24 for Linux RedHat for ProLiant DL785 G6 Service Onsite HW support 24x7, 4hr response and Red Hat AS Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	US144E	
HP 3 year Support Plus 24 for Linux SuSe for ProLiant DL785 G6 Service Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	US145E	
HP 3 year Support Plus 24 ICE for ProLiant DL785 G6 Service Onsite HW support 24x7, 4hr response and Insight Control ( ICE ) SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	US146E	
<b>NOTE:</b> For more information, customer/resellers can contact: <a href="http://www.hp.com/services/carepack">http://www.hp.com/services/carepack</a>		



### Memory

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

#### HP ProLiant DL785 G6 4P Models

##### Standard Memory (One of the following, depending on Model)

64 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) 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 (model AM439A)								
Total Memory = 32 GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	4 GB	4 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	4 GB	4 GB	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	4 GB	4 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	4 GB	4 GB	Empty	Empty	Empty	Empty	Empty	Empty
Standard Memory Configuration (model AM438A)								
Total Memory = 64GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	4 GB	4 GB	4 GB	4 GB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	4 GB	4 GB	4 GB	4 GB	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	4 GB	4 GB	4 GB	4 GB	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	4 GB	4 GB	4 GB	4 GB	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	4 GB	4 GB	2 GB	2 GB	1 GB	1 GB	1 GB	1 GB
Processor 2 Memory Bus	4 GB	4 GB	2 GB	2 GB	1 GB	1 GB	1 GB	1 GB
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	4 GB	4 GB	4 GB	4 GB	2 GB	2 GB	1 GB	1 GB
Processor 8 Memory Bus	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB	1 GB	1 GB

**Example #2: Optional Memory Configuration with Partial Bus Population**  
 Standard Memory plus Optional Memory and Processors  
 Total Memory = 32 GB

	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 5 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 6 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 7 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty
Processor 8 Memory Bus	1 GB	1 GB	1 GB	1 GB	Empty	Empty	Empty	Empty

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

	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 2 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 3 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 4 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 5 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 6 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 7 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB
Processor 8 Memory Bus	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB	8 GB





### Memory

The following memory options are available from HP:

Memory	HP 4GB (2x2GB) Single Rank PC2-6400 (DDR2-800) Registered Memory Kit	497765-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

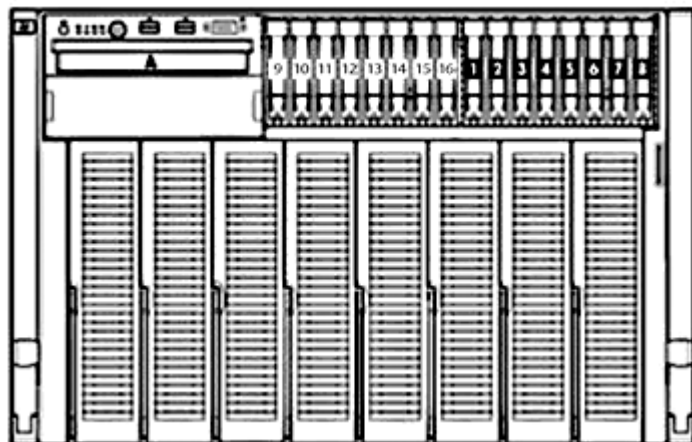
**NOTE:** A minimum of two DIMMs (1 kit) must be installed per processor.

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

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



### Storage



A Slimline Media Bay

1-8 Standard 8 SFF hot plug SAS drive bays

9-16 Optional 8 SFF hot plug SAS drive bays

### Drive Support

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

### Hard Drives

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

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

**NOTE:** All the internal drives in HP ProLiant DL785 G6 will operate at a maximum data transfer rate of 3Gb/s.

**NOTE:** Up to 16 disks in position 1-16 are supported if HP SAS Expander and P410 Controller is used.

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

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 10K DP	Up to 8	1-8	HP Smart Array P400i Controller
450GB 6G SAS 10K DP	Up to 8	9-16	HP Smart Array E500/256MB Controller
300GB 6G SAS 10K DP			HP Smart Array P400/256 MB Controller
146GB 6G SAS 15K DP			HP Smart Array P400/512 MB Controller with BBWC
146GB 6G SAS 10K DP			HP Smart Array P800/512 BBWC Controller
72GB 6G SAS 15K DP			HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller



### Storage

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

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

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 10K DP	Up to 16	1-16	HP Smart Array E500/256MB Controller
450GB 6G SAS 10K DP			HP Smart Array P400/256 MB Controller
300GB 6G SAS 10K DP			HP Smart Array P400/512 MB Controller with BBWC
146GB 6G SAS 15K DP			HP Smart Array P800/512 BBWC Controller
146GB 6G SAS 10K DP			HP Smart Array P212/Zero Memory Controller
72GB 6G SAS 15K DP			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
			HP Smart Array P812/1G Flash Backed Cache Controller
			HP SAS Expander Card

**NOTE:** SAS Expander card can only 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 E500/256MB Controller
			HP Smart Array P400/256 MB Controller
			HP Smart Array P400/512 MB Controller with BBWC
			HP Smart Array P800/512 BBWC Controller
			HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
			HP Smart Array P812/1G Flash Backed Cache Controller



### Storage

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

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 16	1-16	HP Smart Array E500/256MB Controller HP Smart Array P400/256 MB Controller HP Smart Array P400/512 MB Controller with BBWC HP Smart Array P800/512 BBWC Controller HP Smart Array P212/Zero Memory Controller HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller HP SAS Expander Card <b>NOTE:</b> SAS Expander card can only 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	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller
120GB 3.0G SATA SSD	Up to 8	9-16	HP Smart Array P212/ 256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/512 MB FBWC Controller HP Smart Array P411/1G FBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

### Storage

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

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	Up to 16	1-8	HP Smart Array P212/Zero Memory Controller
120GB 3.0G SATA SSD			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P410/512 MB FBWC Controller
			HP Smart Array P410/1G FBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P411/512 MB FBWC Controller
			HP Smart Array P411/1G FBWC Controller
			HP Smart Array P812/1G Flash Backed Cache Controller
			HP SAS Expander Card

**NOTE:** SAS Expander card can only be used with the HP Smart Array P410 Controller.

**NOTE:** SATA Hot Plug Midline(MDL) solid state drives are not supported for factory integration

### External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
60 Modular Smart Array	Up to 4	External	HP Smart Array P212/256 MB Controller
			HP Smart Array E500/256MB 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 P411/1G FBWC Controller
		HP Smart Array P812/1G Flash Backed Cache Controller	
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/256 MB Controller
			HP Smart Array E500/256MB Controller
	Up to 4		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 P411/1G FBWC Controller
		HP Smart Array P812/1G Flash Backed Cache Controller	
HP 2000sa Modular Smart Array Controller	Up to 4	External	HP SC08Ge Host Bus Adapter
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P212/256 MB Controller
	Up to 4	External	HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
		HP Smart Array P411/1G FBWC Controller	
		HP Smart Array P812/1G Flash Backed Cache Controller	



### Storage

Maximum Storage Capacity - (External Enclosure Attached)

Internal 8.000TB (16 x 500GB SFF SAS Drives)

### 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/storage/SPOCK>.

	Position Supported	Controller	Controller Part Number
<b>HP StorageWorks SCSI Tape Drives</b> LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	412911-B21
<b>HP StorageWorks USB Tape Drives</b> DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
<b>HP StorageWorks SAS Tape Drives</b> DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	462828-B21



### Storage

<b>HP StorageWorks SCSI Tape Autoloaders</b> DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	412911-B21
<b>HP StorageWorks SCSI Tape Libraries, External</b> MSL2024 MSL4048 MSL8096 MSL6000	External	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	AH627A
<b>HP StorageWorks SAS Tape Autoloaders and Libraries</b> 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller <b>NOTE:</b> Please check the full compatibility information at: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	462828-B21
<b>HP StorageWorks Fibre Channel Tape Libraries</b> MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs	N/A
<b>HP StorageWorks USB RDX Removable Disk Backup System</b> RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 Port	N/A
<b>HP StorageWorks D2D Backup Systems, iSCSI</b> D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
<b>HP StorageWorks D2D Backup Systems, Fibre Channel</b> D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: <a href="http://www.hp.com/storage/SPOCK">http://www.hp.com/storage/SPOCK</a>	



### Power Specifications

#### HP 1200W Common Slot Silver Hot Plug Power Supply Kit

Part Number	500172-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	97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

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

- There are certain lowline, max configurations that are not supported. All highline configurations are supported. Consult the HP Power Advisor to determine if your lowline configuration is supported.

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





### Technical Specifications

<b>System Unit</b>	<b>Dimensions (H x W x D)</b> (with bezel)	12.04 x 17.32 x 27.4 in (30.58 x 44 x 69.6cm)	
	<b>Weight</b> (approximate)	Maximum	160lb (72 kg)
		(all hard drives, power supplies, and processors installed)	
		Minimum	147 lb (67 kg)
		(one hard drive, 2 power supply, and 4 processor modules installed)	
	<b>Input Requirements</b> (per 3 power supplies non redundant)	Rated Line Voltage	90 - 132 VAC 180 - 264 VAC
		Rated Input Current	24A @ 100 VAC 14A @ 200 VAC
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	2400W @ 100-120 VAC 2800W @ 200-240 VAC
	<b>BTU Rating</b>	Maximum	8189 BTU/hr @ 100-120 VAC 9554 BTU/hr @ 200-240 VAC
	<b>Power Specifications</b>	<b>NOTE:</b> To review typical system power ratings use the HP Power Advisor which is available online located at url: <a href="http://www.hp.com/go/proliant-energy-efficient">www.hp.com/go/proliant-energy-efficient</a> or <a href="http://www.hp.com/go/hppoweradvisor">www.hp.com/go/hppoweradvisor</a>	
		<ul style="list-style-type: none"> <li>• Click on the system of interest. Example: DL785 G6</li> <li>• Follow the instructions of the next screens</li> </ul>	
	<b>Power Supply Output</b> (per power supply)	Rated Steady-State Power	800 W (at 100 VAC), 1200 W (at 200 VAC)
		Maximum Peak Power	800 W (at 100 VAC), 1200 W (at 200 VAC)
	<b>System Inlet Temperature</b>	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60° (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	<b>Relative Humidity</b> (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non condensing.
	<b>Altitude</b>	Operating	3050 m (10,000 ft). This value may be limited by



### Technical Specifications

		the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min)
<b>Acoustic Noise</b>		Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).
	Idle	
	L WAd	7.6 B
	L pAm	58 dBa
	Operating	
	L WAd	7.6 B
	L pAm	58 dBa
<b>Emissions Classification (EMC)</b>	<b>FCC Rating</b>	Class A
	<b>Normative Standards</b>	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

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

<b>Slimline CD-RW/DVD-ROM 24X Combo Drive</b>	<b>Shipping Dimensions</b>	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)		
	<b>Shipping Weight</b>	5 lb (2.27 kg)		
	<b>Disk</b>	<b>Applicable Disk</b>	DVD-ROM	
			DVD-R (Read Only)	
			2.6 GB/side DVD-RAM (Read Only)	
			5.2 GB/side DVD-RAM (Read Only)	
			CD-ROM Mode-1 data disc	
			CD-ROM Mode-2 data disc	
			CD Audio disc	
			CD-Extra	
		CD-RW		
		CD-R		
		CD Text		
		PhotoCD		
		CD-I (mode 2)		
		CD-I Ready		
		CD-Bridge		
	<b>Capacity</b>	DVD-ROM	DVD-SL	4.7 GB/side



### Technical Specifications

		DVD-DL	8.5 GB/side
		Double Sided	9.40 GB/side
		DVD-R	3.95 GB/side
		DVD-RAM	2.6 GB/side and 5.2 GB/
		CD-ROM	Mode-1 650 MB (550 MB)
			Mode-2 742 MB (640 MB)
	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		



### Technical Specifications

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

<b>Two embedded NC371i Multifunction Gigabit Server Adapters</b>	<b>Network Interface Compatibility</b>	10/100/1000-T IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX	
	<b>Data Transfer Method</b>	PCI Express, four lanes (x4)	
	<b>Controller</b>	BCM5706	
	<b>Network Transfer Rate</b>	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
	<b>Connector</b>	RJ-45	
	<b>Cable Support</b>	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
10/100/1000 Base-TX		Category 5 UTP up to 328 ft (100 m)	



### Technical Specifications

HP Integrated Lights-Out 2 (iLO 2) integrated on system board	Architecture	32-bit PCI-based health and remote management ASIC	
	Processor	32-bit RISC processor core running at 66MHz	
	Upgradeability	Option firmware upgradeable via Flash ROM	
	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)		
Command Line Support	Telnet, Secure Shell and serial port access		
	Secure Socket Layer		
	Secure Shell version 2 (Password and certificate)		
Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface		
	RC4 encryption of video		
Directory Support Services	Active Directory v1.0 (Windows 2003)		
Driver Support	Health Driver (HP ProLiant iLO 2 Management Controller Driver)		
	iLO Management Channel Interface Driver		
Management protocols supported	SNMP 2, IPMI 2.0 (KCS interface), DMTF Server Management Command Line Protocol Specification		
	(SM CLP), DMTF Web Services Management Specification (WS Management)		

### Technical Specifications

#### Environment-friendly Products and Approach

#### End-of-life Management and Recycling

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

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

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

