## 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.
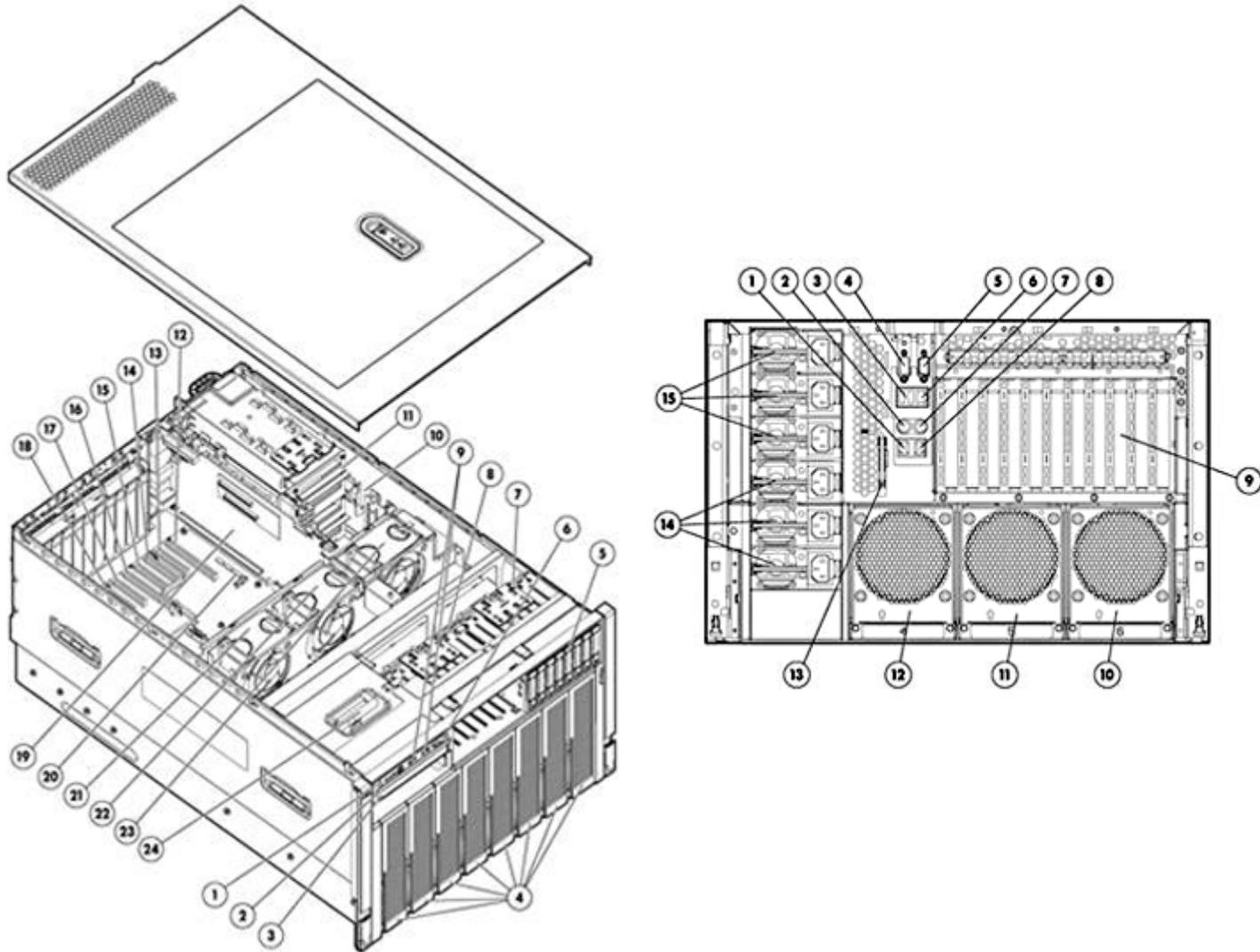
Front View:

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)
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

Rear View:

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

Overview

12.	PCI-Express x8 non-hot-plug expansion slot 1		14.	Redundant power supply 4 - 6 (optional)
13.	PCI-Express x4 non-hot-plug expansion slot 2		15.	Power supply 1 - 3
14.	PCI-Express x4 non-hot-plug expansion slot 3			
15.	PCI-Express x4 non-hot-plug expansion slot 4			
16.	PCI-Express x16 non-hot-plug expansion slot 5			
17.	PCI-Express x4 non-hot-plug expansion slot 6			
18.	PCI-Express x4 non-hot-plug expansion slot 7			
19.	Serial Peripheral Interface (SPI) Board			
20.	System Maintenance Switch			
21.	Fan 1			
22.	Fan 2			
23.	Fan 3			
	Not shown: PCI-Express expansion slots 8 - 11			

QuickSpecs

Standard Features

Processor Four or eight of the following depending on Model	**Six-Core Processors**
	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)
	NOTE: Processor wattage references reflect Average CPU Power (ACP). For more information on ACP visit: http://www.amd.com/powernow.
	NOTE: 4 or 8 supported.
	NOTE: Up to 2.8GHz clock speed.

Cache Memory One of the following depending on Model	512 KB Level 2 cache memory per core
	6 MB Level 3 cache memory

Chipset	Serverworks HT-2100 Northbridge and HT-1000 Southbridge chipset

Upgradeability	Supports up to 8 processors

Memory Protection	Advanced ECC

Memory One of the following depending on Model	Type	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)
	NOTE: Support of low-power or regular PC2-5300 or PC2-6400 registered DIMMs.	

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

Expansion Slots

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	
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

Standard Features

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

Storage Controllers	All Models	HP Smart Array P400i Controller

Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), 512MB, 1G with FBWC, and Smart Array Advanced Pack (SAAP).

QuickSpecs

Standard Features

Internal Storage Devices	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

Maximum Internal Storage Type	Hot Plug SAS	8.0TB	16 x 500GB SFF SAS drives

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front, 1 rear
	Keyboard	1
	USB 2.0 Ports	2 front, 2 rear, 1 internal

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

	iLO 2 remote management port	1
	Network RJ-45	2

Industry Standard Compliance

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

Server Power Cords

NOTE: 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: http://www.hp.com/go/powercordmatrix.

Power Supply
One of the following depending on Model

1200 Watts- High Efficiency Power Supply (Redundant Hot Plug, Autoswitching), CSCI 2007/2008
NOTE: Three Hot Plug Power Supplies ship standard with the AM439A sku. Three optional power supplies may be added for redundancy.
NOTE: Six Hot Plug Power Supplies ship standard with the AM438A sku (the 4th, 5th and 6th power supplies are for redundancy).

System Fans

6 Hot plug, redundant fans

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

Required Cabling

For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl785

QuickSpecs

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Microsoft Windows Server Hyper-V Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Solaris VMware HP Citrix Essentials for XenServer

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

Graphics	Integrated ATI ES1000, 32MB video standard

Form Factor	Rack (7U = 12.25 inches), ships with sliding rails and cable management system Space saving form factor (7U) provides space efficiencies while providing maximum deployment flexibility

HP Insight Management Control Software — HP Insight Foundation

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: http://www.hp.com/go/foundation.

The foundation pack includes:

- HP SmartStart
- HP Management DVD
- HP ProLiant Smart Update Firmware DVD

SmartStart version supported (minimum): SmartStart 8.30
http://www.hp.com/servers/smartstart

NOTE: In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.

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

Standard Features

Intelligent Manageability	HP Systems Insight Manager software SmartStart Redundant ROM Remote Flash ROM Management Agents Integrated Management Log (IML) Automatic Server Recovery-2 (ASR-2) ROM-Based Setup Utility (RBSU) Dynamic Sector Repairing (with Smart Array Controllers) Drive Parameter Tracking (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SAS hard drives and memory) Redundant/adaptive load balancing NIC Support
Security	Power-on password Keyboard password External USB port enable/disable Network Server Mode Serial interface control Administrator's password Removable Diskette drive (optional) Removable optical drive
Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. **NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. 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
		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
High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and Novell SLES, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters.
	HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and

Optional Features

deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler, the HP-MPI parallelization library, the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack

Solutions

The very scalable 8-socket x86 ProLiant DL785 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

Factory Express Portfolio for Servers and Storage

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

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

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

HP Enterprise Configurator

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

Service and Support

	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

QuickSpecs

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

HP ProLiant DL785 G6 8439SE 2.8GHz Six Core 4P 64GB ICE Rack Server
AM438A

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

Base Models

HP ProLiant DL785 G6 8431 2.4GHz Six Core 4P 32GB Rack Server
AM439A

Processor	6 Core AMD Opteron™ 8400 Series Processors
Cache Memory	6MB shared L3 cache per processor
Memory	32GB (8 X 4GB) of PC2-6400 DDR SDRAM standard
Network Controller	Two embedded NC371i Multifunction Gigabit Network Adapters
Storage Controller	HP Smart Array P400i/512MB BBWC Controller
Hard Drive	None
Internal Storage	8.0 TB max
Optical Drive	Slimline CD-RW/DVD-ROM 24x Combo Drive
Power Supply	Three 1200W Power Supplies standard
Fans	6 Hot plug, redundant fans
Form Factor	7U
Warranty	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

Factory Integrated Models ship with:

Two embedded NC371i Multifunction Gigabit Network Adapters
HP Smart Array P400i Controller
HP Integrated Lights-Out 2 (iLO 2) management processor management
Six (6) Redundant Hot Plug Fans
Three Hot Plug Power Supply
Rack 7U Form Factor

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

HP Processors

NOTE: If eight processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.

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
16 GB REG PC2-5300 2 x 8 GB Dual Rank Kit	408855-B21
64 GB REG PC2-5300 8 x 8 GB Dual Rank Kit	495605-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 Upgrade Options

HP Smart Array P400 256MB FIO Cache Module	405139-B21

NOTE: Supports Smart Array P400 Controller and Smart Array P400i Controller only.

HP 512MB w/Battery Smart Array Battery Back Write Cache Enabler	405148-B21

HP Optical Drives

NOTE: Optical drives are ejectable.

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

Configuration Information

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

Step 4: Choose Additional Options for Factory Integration

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

QuickSpecs

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

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

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) Midlin**	
	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

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

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
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.

QuickSpecs

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

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

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

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 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

Additional Options

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

High Performance Clusters	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

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

HP Storage Controllers	**SAS Controllers**	
	Smart Array E500 Controller	
	HP Smart Array E500/256 2-ports Ext PCIe x8 SAS Controller	435129-B21
	Smart Array P400 Controller	
	HP Smart Array P400 512MB Battery Kit	411064-B21
	HP Smart Array P400/256 2-ports Int PCIe x8 SAS Controller	405132-B21
	NOTE: 405132-B21 comes with 256 MB Cache.	
	HP Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC 2-ports Int/2-ports Ext PCIe x8 SAS Controller	381513-B21
	Smart Array P212 Controller	
	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
	HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
	Smart Array P410 Controller	
	HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
	HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	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
	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

Additional Options

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

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

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

HP Smart Array Cache Battery Kit	383280-B21

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

HP 256MB P-Series Cache Upgrade	462968-B21

NOTE: 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

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

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
HP 1GB Flash Backed Cache	534562-B21

NOTE: Option kit not supported for factory integration.
NOTE: Supported on HP Smart Array P410 Controller and HP Smart Array P411 Controller only.

HP 8484 to Mini SAS 33in Cable Assembly	591734-B21

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html (Smart Array E500 Controller)
http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html (Smart Array P400 Controller)
http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html (Smart Array P800 Controller)
http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller)
http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 Controller)
http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller)
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller)

SAS Controller Options

HP 24 Bay 3Gb SAS Expander Card	468406-B21

NOTE: Option kit not supported for factory integration.
NOTE: 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

Additional Options

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.
NOTE: AM440A HP DL785 SAS Expander cable option kit required.
NOTE: Requires SA P410 Controller with Cache memory.
NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html (SAS Expander Card)

HP DL785 G6 SAS Expander Cable Option Kit	AM440A

NOTE: Option kit not supported for factory integration
NOTE: Required each time the 468406-B21 HP SAS Expander card is ordered. Provides (6) cables to connect the Smart Array Controller to the Expander, and the Expander to the Primary and Optional SAS backplanes. The SAS cables provided with the DL785 and the Expander are not used.

SAS HBA

HP SC08Ge 2-ports Ext PCIe x8 SAS Host Bus Adapter	488765-B21

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

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

SCSI HBA

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

HP Cable Options	
HP High Power Graphics Card Cable	AH270A

NOTE: High Line Voltage is required with this kit. Using Low Line Voltage will halt the system. However if the total power usage is validated using the 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

NOTE: Option kit not supported for factory integration
NOTE: Supports internal connection of Smart Array P410 and P812 Controllers. Provides (2) cables to connect the Controller to the Optional SAS Backplane (HP DL785 G5 SAS Option Kit - AH267A). This is required each time one of the Smart Array P410 and P812 Controllers is ordered without factory integration and will be used to control internal drives 9-16.

HP Tape Backup

Tape Autoloaders

HP StorageWorks 1/8 G2 Tape Autoloader

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

Tape Libraries

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

Additional Options

HP Disk Backup	**D2D Backup**	
	HP StorageWorks D2D2504i Backup System	EJ002A
	HP StorageWorks D2D4112 Backup System	EH993A
	HP StorageWorks D2D4009i Backup System	EH939A
	HP StorageWorks RDX Removable Disk Backup Systems USB	
	HP StorageWorks RDX 1TB Internal Removable Disk Backup System	BV847A
	NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge.	

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

HP Disk Storage Systems	**MSA Drive Enclosures**	
	HP StorageWorks MSA60 Array	418408-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html	
	HP StorageWorks MSA70 Array	418800-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html	
	HP 2012sa Single Controller Modular Smart Array	AJ752A
	HP 2012sa Dual Controller Modular Smart Array	AJ753A
	NOTE: Please see QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.html	
	Disk Enclosures	
	HP StorageWorks D2600 Disk Enclosure	AJ940A
	HP StorageWorks D2700 Disk Enclosure	AJ941A

QuickSpecs

Additional Options

HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G2 UPS	
	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

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html

HP R3000 UPS

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

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html

HP Rack-Mountable R5500 UPS

HP R5500 VA 3U INT Uninterruptible Power System	AF416A
HP R5500 VA 3U NA/JP Uninterruptible Power System	AF426A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.

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

HP Power Distribution Units	**Monitored PDUs**	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 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
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP Single Input 1 Phase 24A Monitored Power Distribution Unit	AF914A
	HP Single Input 1 Phase 32A Monitored Power Distribution Unit	AF915A
	Modular PDUs	
	HP 24A High Voltage Modular Power Distribution Unit	252663-D72
	HP 16A High Voltage Modular Power Distribution Unit	252663-B24

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

HP 32A High Voltage Modular Power Distribution Unit	252663-B31
HP 40A High Voltage Modular Power Distribution Unit	252663-D73

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

Additional Options

http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)
NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.
NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

HP Rack Series	**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 (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
	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

Additional Options

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 (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 (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
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

Additional Options

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

HP KVM Switch Options

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

HP USB and SD Options

HP 1.44MB USB External Floppy Drive	DC141B
HP 2GB USB Flash Media Drive Key Kit	608447-B21

NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

HP USB 2-Button Optical Scroll Mouse	DC172B
HP USB Standard Keyboard US	DT528A#ABA

HP Care Pack Services

Hardware Services On-site Service

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

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

HP 3 year 6 hour 24x7 Call to Repair ProLiant DL785 G6 Server Hardware Support	US141E

Installation & Start-up Services

HP Install ProLiant DL785 Service	UM450E
HP Startup ProLiant DL785 / DL980 Service Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	UM451E

Support Plus 24

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

Additional Options

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

Memory

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

Memory

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:

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

QuickSpecs

Memory

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

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
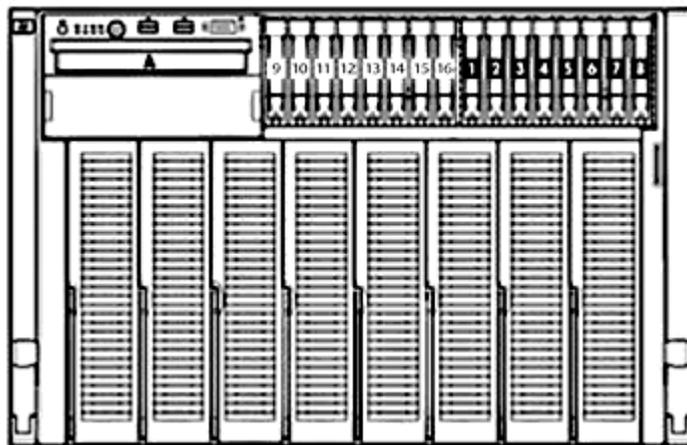
A	Slimline Media Bay
1-8	Standard 8 SFF hot plug SAS drive bays
9-16	Optional 8 SFF hot plug SAS drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Ejectable Slimline Drives			
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
			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

Storage

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

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

Storage

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.

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

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

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Storage

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
	Up to 8		HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G 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
	Up to 4		HP Smart Array E500/256MB Controller HP Smart Array P800/512 BBWC Controller HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G 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

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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/go/connect.

	Position Supported	Controller	Controller Part Number
HP StorageWorks SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks USB Tape Drives DAT 40	External	USB 2.0 Port	N/A

Storage

DAT 72
DAT 160
DAT 320
1U USB Rack-Mount Kit

HP StorageWorks SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	412911-B21
HP StorageWorks SCSI Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	HP StorageWorks U320e SCSI Dual Channel Host Bus Adapter **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A
HP StorageWorks SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller **NOTE:** Please check the full compatibility information at: http://www.hp.com/go/connect	462828-B21
HP StorageWorks Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs	N/A
HP StorageWorks USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 Port	N/A

Storage

HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect

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 or 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

QuickSpecs

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	12.04 x 17.32 x 27.4 in (30.58 x 44 x 69.6cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	160lb (72 kg)
		Minimum (one hard drive, 2 power supply, and 4 processor modules installed)	147 lb (67 kg)
	Input Requirements (per 3 power supplies non redundant)	Rated Line Voltage	90 - 132 VAC 180 - 264 VAC
		Rated Input Current	24A @ 100 VAC 14A @ 200 VAC
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	2400W @ 100-120 VAC 2800W @ 200-240 VAC
	BTU Rating	Maximum	8189 BTU/hr @ 100-120 VAC 9554 BTU/hr @ 200-240 VAC
	Power Specifications	**NOTE:** To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor • Click on the system of interest. Example: DL785 G6 • Follow the instructions of the next screens	
	Power Supply Output (per power supply)	Rated Steady-State Power	800 W (at 100 VAC), 1200 W (at 200 VAC)
		Maximum Peak Power	800 W (at 100 VAC), 1200 W (at 200 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60° (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non condensing.
	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min)
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and	

Technical Specifications

declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle

L WAd	7.6 B
L pAm	58 dBa

Operating

L WAd	7.6 B
L pAm	58 dBa

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

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

Slimline CD-RW/DVD-ROM 24X Combo Drive	**Shipping Dimensions**	13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)		
	Shipping Weight	5 lb (2.27 kg)		
	Disk Applicable Disk	DVD-ROM		
		DVD-R (Read Only)		
		2.6 GB/side DVD-RAM (Read Only)		
		5.2 GB/side DVD-RAM (Read Only)		
		CD-ROM Mode-1 data disc		
		CD-ROM Mode-2 data disc		
		CD Audio disc		
		CD-Extra		
		CD-RW		
		CD-R		
		CD Text		
		PhotoCD		
		CD-I (mode 2)		
		CD-I Ready		
		CD-Bridge		
	Capacity	DVD-ROM	DVD-SL	4.7 GB/side
			DVD-DL	8.5 GB/side
			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)

Technical Specifications

			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		

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

Technical Specifications

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

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

Technical Specifications

	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)
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.