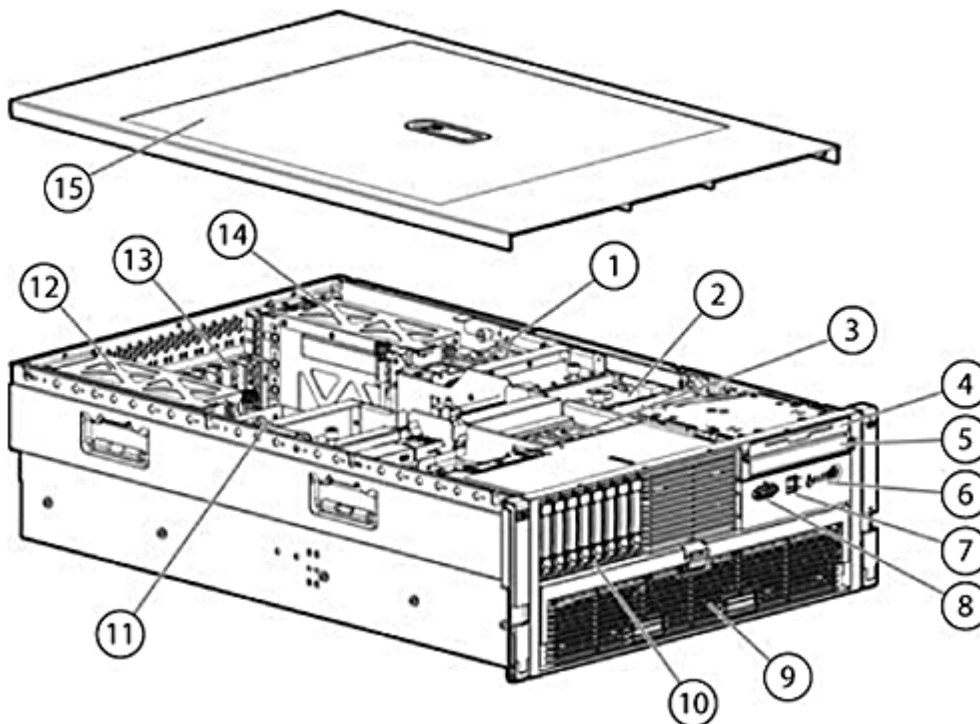


Overview



1. Hot Plug Redundant Fans (standard)

2. System Insight Display

3. Hot Plug Redundant Fans (standard)

4. 1.44 MB Diskette Drive (optional)

5. DVD/CD-RW drive (standard)

6. Front Panel LED Display (internal and external health, Unit ID light) and Power Button

7. Two USB ports

8. One video port

9. Front accessible processor / memory cage

10. Eight bay Small Form Factor (SFF) Serial Attached SCSI (SAS) drive cage

11. 4U (7" Height) Rack Form Factor

12. Hot Plug Redundant Power Supply

13. Nine PCI I/O Slots (2 64-bit/100MHz PCI-X, 4 PCI-Express x4, 3 PCI-Express x8)

14. Hot Plug Redundant Power Supply

15. Removable Top Access Panel

Overview

At A Glance

The HP ProLiant DL585 G2, the best price/ performance x86 4-processor server in the industry, now supports the new AMD Rev F Opteron Dual-Core processor further increasing the performance leadership of this system. Dual-Core AMD Opteron processors enable a huge boost in performance.

The HP ProLiant DL585 G2 follows the award winning legacy of the HP ProLiant DL585 by offering exceptional price/performance and price per watt metrics. The ProLiant DL585 G2 continues to maintain price: performance leadership, especially with a variety of 32-bit application benchmarks. The 64 GB memory footprint enables most applications to run faster or support more users than other systems and with the inclusion of Rev F processors the ProLiant DL585 G2 has now been optimized for Virtualization. The ProLiant DL585 G2 combines AMD Opteron processor technology, best-in-class management and outstanding uptime features in an enterprise-class system ideal for large data center deployments.

- **Processors:**
 - Dual-Core AMD 8200 Series Processors
- **Memory:**
 - Up to 128 GB of memory, supported by (32) slots of PC2-5300 Registered DIMMs at 667MHz
- **Storage Controller:**
 - HP Smart Array P400/256MB Controller (optional 512MB battery backed write cache)
 - HP Smart Array P400/512MB BBWC Controller
- **Internal Drive Support:**
 - Up to 1.168TB (8 x 146GB SFF SAS hot plug drives)
 - Multi-Bay floppy (optional) and DVD/CD-RW (standard) drives
- **Network Controller:**
 - Two (2) Embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits
- **Expansion Slots:**
 - 9 total slots: (3) x8 PCI-Express; (4) x4 PCI-Express; (2) PCI-X (100MHz)
 - One slot populated with the Smart Array P400 Controller
- **Video Ports:**
 - One front and one rear video ports
- **USB Ports:**
 - (5) Total USB 2.0 Ports: (2) front; (2) rear; (1) internal
- **Redundancy:**
 - Redundant hot plug power supplies and fans
- **Management:**
 - Integrated Lights-Out Standard Management 2 (iLO 2) on system board
 - Innovative diagnostic lighting (System Insight Display) for rapid response to service events
- **Form Factor:**
 - Delivering maximum performance in a versatile, rack optimized form factor
- **Deployment/Serviceability:**
 - Tool-less and virtually cable-less internal design
 - Rapid Deployment racking solution (rack rails and cable management)
- **Warranty:**
 - Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. SATA hard drives have a one-year warranty.

Standard Features

Processor Two or four of the following depending on Model	AMD Opteron Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts) NOTE: 4 supported. AMD Opteron Processor 8218, Dual-Core (2.6 GHz, 95 Watts) NOTE: 2 or 4 supported. AMD Opteron Processor 8216, Dual-Core (2.4 GHz, 95 Watts) NOTE: 2 or 4 supported. AMD Opteron Processor 8214, Dual-Core (2.2 GHz, 95 Watts) NOTE: 2 or 4 supported. AMD Opteron Processor 8212, Dual-Core (2.0 GHz, 95 Watts) NOTE: 2 or 4 supported.										
Cache Memory	1MB Integrated Level 2 Cache memory per core										
Upgradeability	HP ProLiant DL585 G2 servers can support up to 4 processors. Upgradeable to quad-core processors (not available at this time)										
Chipset	nVidia NForce Professional 2200 and 2050 chipsets, and AMD-8132 chipset										
Memory Protection & Functionality	Advanced ECC										
Memory	<table><tr><td>Type</td><td>PC2-5300 Registered DIMMs at 677 MHz</td></tr><tr><td>Standard</td><td>2 GB (4 x 512 MB)</td></tr><tr><td>One of the following depending on Model</td><td>4 GB (4 x 1 GB)</td></tr><tr><td></td><td>8 GB (8 x 1 GB)</td></tr><tr><td>Maximum</td><td>128 GB (16 x 8 GB)</td></tr></table>	Type	PC2-5300 Registered DIMMs at 677 MHz	Standard	2 GB (4 x 512 MB)	One of the following depending on Model	4 GB (4 x 1 GB)		8 GB (8 x 1 GB)	Maximum	128 GB (16 x 8 GB)
Type	PC2-5300 Registered DIMMs at 677 MHz										
Standard	2 GB (4 x 512 MB)										
One of the following depending on Model	4 GB (4 x 1 GB)										
	8 GB (8 x 1 GB)										
Maximum	128 GB (16 x 8 GB)										
Network Controller	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits										

Standard Features

Expansion Slots	Bus speed	Bus number	PCI Voltage	Notes
1	64-bit / 100 MHz PCI-X	Bus 0x42 = 66	3.3 Volt	
2	64-bit / 100 MHz PCI-X	Bus 0x42 = 66	3.3 Volt	
3	PCI-Express x4	Bus 0x49 = 73		
4	PCI-Express x4	Bus 0x4C = 76		
5	PCI-Express x8	Bus 0x46 = 70		
6	PCI-Express x4	Bus 0x4F = 79		
7	PCI-Express x8	Bus 0x02 = 2		
8	PCI-Express x8	Bus 0x05 = 5		
9	PCI-Express x4	Bus 0x08 = 8		Reserved slot for Smart Array P400 Controller

NOTE: All slots can accept universal keyed PCI cards.

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).

Manageability Integrated Lights-Out 2 (iLO 2) Standard Management (ASIC on the System Board)

Storage Controllers HP Smart Array P400/256MB Controller (in a PCI-Express slot)
 One of the following depending on Model **NOTE:** Standard on 2.0GHz and 2.2GHz models
 HP Smart Array P400/512MB BBWC Controller (in a PCI-Express slot)
NOTE: Standard on 2.4GHz, 2.6GHz and 2.8GHz models

Storage Data Protection The Battery-Backed Write Cache (BBWC) Enabler for the Smart Array P400 Controller protects up to 512-MB write cache memory from hard boot, power, controller, or system board failures.

- Standard on all HP ProLiant DL585 G2 Models
- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

NOTE: Safely transport your write cache data to another HP ProLiant DL585 G2 in the data center by removing the BBWC Enabler and Smart Array P400 Controller Memory Module simultaneously (connected by short cable).

Storage

Diskette Drive	1.44 MB Diskette Drive (slimline) - ejectable for security and serviceability
Optical Drive	Slimline DVD/CD-RW Drive Standard on all models - ejectable for security and serviceability
Hard Drives	None ship standard
Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives

Maximum Internal Storage Type	Hot Plug SAS	1.168TB	8 x 146GB SFF SAS drives (internal hot plug)
	Hot Plug SATA	480GB	8 x 60GB SFF SATA (internal hot plug)

Standard Features

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Video	1 front, 1 rear
	Keyboard	1
	USB 2.0 Ports	2 front, 2 rear, 1 internal
	iLO 2 Remote Management	1
	Network RJ-45	2

Graphics	Integrated ATI-RN50 with 32MB DDR memory
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Form Factor	Rack (4U = 7 inches), ships with sliding rails and cable management system Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility
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ProLiant Essentials Foundation Pack Software

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.

Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit <http://www.hp.com/go/hpsim>.

HP SIM provides organizations with the following benefits:

- Simplifies and consolidates infrastructure lifecycle management using task and query based functionality
- Provides the foundation for infrastructure automation and virtualization
- Enables IT management based on business processes not hardware platforms
- Lowers infrastructure maintenance cost and frees resources for innovation
- Maximizes resource utilization with virtualization technologies
- Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView

SmartStart

SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at <http://www.hp.com/servers/smartstart>. SmartStart version supported (minimum): SmartStart 7.60.

Standard Features

Insight Management Agents	<p>Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers,</p> <p>Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at http://www.hp.com/servers/manage</p>
Subscriber's Choice	<p>Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.</p>
ROMPaq, support software, and configuration utilities	<p>The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at http://www.hp.com/servers/smartstart.</p>
Survey Utility and diagnostics utilities	<p>The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.</p>
Optional ProLiant Essentials Value Packs	<p>Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:</p> <ul style="list-style-type: none">• Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: http://www.hp.com/servers/rdp.• Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.• Performance Management Pack – a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.• Intelligent Networking Pack – detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.• Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well

Standard Features

operating system configurations that can be exploited by viruses, worms, and other blended threats.

- Virtual Machine Management Pack – provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.
- Server Migration Pack - The Server Migration Pack automates the manual processes required for migrating servers between physical or virtual platforms (P2V, V2P, and V2V).
- Server Migration Pack – P2P Edition: Upgrading or replacing your existing server? Effortlessly transition to new servers with automated, accurate and affordable migration of OS, application and data.
- Accelerated iSCSI Pack – enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network
- Remote Directory Memory Access (RDMA) Pack for Embedded Multifunction Gigabit Server Adapters – provides direct and faster communication between application buffers in separate servers for tasks that involves moving large amounts of data, such as network backups, database read/write, and high performance computing.
- Integrated Lights-Out Advanced Pack - upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM graphical console, virtual media, power management and enterprise security.

Optional Remote Management Packs

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

Industry Standard Compliance

ACPI 1.0a. Compliant
PCI 2.2 Compliant
PXE Support
WOL Support
Physical Address Extension (PAE) Support
Microsoft® Logo certifications
USB 2.0 Support

Standard Features

Remote Management

Integrated Lights-Out 2 (iLO 2) Standard Management

- Virtual Text Remote Console
- Virtual Power Button Control
- Integrated Remote Console
- Dedicated & full function shared network connectivity
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

Intelligent Manageability

HP Systems Insight Manager

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

Hot Spare Boot

NOTE: Upon the event of a failed processor or VRM in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).

Availability

- Smart Array P400 Controller with standard Battery Backed Write Cache (BBWC) Enabler provides transportable data protection and increases overall controller performance. Up to 512MB Battery Backed Write Cache protection available on all HP ProLiant DL585 G2 models.
- Up to eight hot-plug SFF SAS Hard Drives
- Dual Hot-Plug Redundant Power Supplies
- Hot-Plug Redundant Fans (standard)

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

Standard Features

Serviceability

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

Security

Power-on password
Keyboard password
Diskette drive control enable/disable
Diskette boot control enable/disable
External USB port enable/disable
Network Server Mode
Serial interface control
Administrator's password
Disk configuration lock
Removable Diskette drive (optional)
Removable CD-ROM or DVD drive

Power Supply

910W (low line), 1300W (high line) with 12V main output. Size is 2.8"(H) X 4.9"(W) X 7.5"(L).
NOTE: One Hot Plug Power Supply ships standard with 2.0GHz and 2.2GHz models (optional Redundant Hot Plug Power Supply Option Kit).
NOTE: Two Hot Plug Power Supplies ship standard with 2.4GHz, 2.6GHz and 2.8GHz models.

UPS and PDU Power Cord Matrix

Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:
<ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf>.

System Fans

Standard	6 Hot plug, redundant fans (individually removable)
Maximum	6 Hot plug, redundant fans (individually removable)

Required Cabling

For required cabling information, refer to the HP Web site at
<http://h18000.www1.hp.com/products/servers/proliantDL585/>

Standard Features

OS Support

Windows Server 2003
Red Hat Enterprise Linux
SuSE Linux Enterprise Server
Sun Solaris
VMware Virtualization Software

NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL585 G2, please see: <http://www.hp.com/support>.

NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at <http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html>.

NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:

<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: <http://h18004.www1.hp.com/products/servers/software/OEM.html>

Rack Airflow Requirements

Rack 10000 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 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 5,350 sq cm (830 square inches) 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 7 cm (2.75 inches).

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: <http://www5.hp.com/products/servers/proliantdl585/index.html>.

Rack Mounting Requirements

HP ProLiant DL585 G2 rack models provide tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000, HP/E series, H9 series and third party racks) with an adjustment range from 24" – 36" in depth. The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

HP ProLiant DL585 G2 in Telco Racks Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions (<http://www.racksolutions.com/hp/>)

Standard 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 MSA1000, 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 eCo-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.

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. 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. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Server Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

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

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

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

Enhanced Care – Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years

Continuance Care – Recommended service delivering cost-effective support options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem identification and

Standard Features

resolution.

- *6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Total Care – Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, integrated hardware and software services

- *Support Plus 24 – Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays*

Deployment Services – HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers – and free customers IT support staff to focus on what they do best, their business.

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

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

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

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

Solutions

Solutions

Designed for enterprise customers with growing data centers and application and Internet service providers that require a rack optimized 4-processor server that delivers maximum performance and high availability for highly complex, business critical applications. Specifically, the HP ProLiant DL585 G2 would be excellent for running the following types of applications:

Typical Usage:

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

Models

Models

DL585R02 O2.8GHz-1MB, 8GB (4P Dual-Core) 413930-xx1	Processor(s)	(4) AMD Opteron Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
Form Factor	Rack 4U	

DL585R02 O2.6GHz-1MB, 4GB (2P Dual-Core) 413929-xx1	Processor(s)	(2) AMD Opteron Processor 8218, Dual-Core (2.6 GHz, 95 Watts) (2 or 4 supported)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	4 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
Form Factor	Rack 4U	

Models

DL585R02 O2.4 GHz-1MB, 2GB (2P Dual-core) 413928-xx1	Processor(s)	(2) AMD Opteron Processor 8216, Dual-Core (2.4 GHz, 95 Watts) (2 or 4 supported)
	Cache Memory	1-MB Integrated Level 2 Cache
	Memory	4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168GB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	Two 910W/1300W Power Supplies standard (second power supply for redundancy)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
Form Factor	Rack 4U	

DL585R02 O2.2 GHz-1MB, 2GB (2P Dual-Core) 418550-xx1	Processor(s)	(2) AMD Opteron Processor 8214, Dual-Core (2.2 GHz, 95 Watts) (2 or 4 supported)
	One of the following depending on Model	(2) AMD Opteron Processor 8212, Dual-Core (2.0 GHz, 95 Watts) (2 or 4 supported)
DL585R02 O2.0 GHz-1MB, 2GB (2P Dual-Core) 413927-xx1	Cache Memory	1 MB Integrated Level 2 Cache
	Memory	4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz
	Network Controller	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters
	Storage Controller	HP Smart Array P400/256MB Controller
	Manageability	Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives)
	Power Supply	One 910W/1300W Power Supply standard (second power supply for redundancy is optional)
	Optical Drive	Slimline DVD/CD-RW Drive (8X/24X) (ejectable)
	Form Factor	Rack 4U

Country Code Key	XX=00	US
	XX=20	Brazil
	XX=29	Japan
	XX=37	A/P
	XX=42	Europe
	XX=AA	PRC

Configuration Information - Factory Integrated Models (North America only)

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.

NOTE: HP does not allow factory integration of options into standard models listed above.

Configure-to-order servers must start with a CTO Chassis.

NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

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

Step 1: Base Configuration

Models	HP ProLiant DL585 G2 Rack CTO Chassis	418633-B21
	Factory Integrated Models ship with:	
	Two (2) Embedded NC371i Multifunction Gigabit Network Adapters	
	Integrated Lights-Out 2 (iLO 2) Standard management	
	Six (6) Redundant Hot Plug Fans	
	One Hot Plug Redundant Power Supply	
	Rack 4U Form Factor	

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

Processors	AMD Opteron 8220SE 2.8 GHz-1 MB Dual-Core Processor 2P Option Kit	413934-L21
	NOTE: If four processors are desired, select one 413934-L21 and one 413934-B21.	
	AMD Opteron 8218 2.6 GHz-1 MB Dual-Core Processor 2P Option Kit	413933-L21
	NOTE: If four processors are desired, select one 413933-L21 and one 413933-B21.	
	AMD Opteron 8216 2.4 GHz-1 MB Dual-Core Processor 2P Option Kit	413932-L21
	NOTE: If four processors are desired, select one 413932-L21 and one 413932-B21.	
	AMD Opteron 8214 2.2 GHz-1 MB Dual-Core Processor 2P Option Kit	416734-L21
	NOTE: If four processors are desired, select one 416734-L21 and one 416734-B21.	
	AMD Opteron 8212 2.0 GHz 1 MB Dual-Core Processor 2P Option Kit	413931-L21
	NOTE: If four processors are desired, select one 413931-L21 and one 413931-B21.	

Base Memory	1 GB REG PC2-5300 (2 x 512 MB) single rank	408850-B21
	2 GB REG PC2-5300 (2 x 1 GB) single rank	408851-B21
	4 GB REG PC2-5300 (2 x 2 GB) dual rank	408853-B21
	8 GB REG PC2-5300 (2 x 4 GB) dual rank	408854-B21
	NOTE: Memory must be ordered in like-pairs, i.e. two of the same size.	
	NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 677 MHz.	

Storage Controllers	HP Smart Array P600/256 BBWC Controller	337972-B21
	HP Smart Array P600/512 BBWC Controller, Factory Integrated Only	432103-B21
	HP Smart Array P400/256MB Controller	405132-B21
	HP Smart Array P400/512MB BBWC Controller	411064-B21
	HP 8 Internal Port SAS HBA with RAID	347786-B21

Configuration Information - Factory Integrated Models (North America only)

Optical Drives	Slimline CD-RW/DVD-ROM 24X Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21

Step 3: Choose Additional Options for Factory Integration

NOTE: Select from "Options" section below.

Options

NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

HP ProLiant DL585	AMD Opteron Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts) 2P Option Kit	413934-B21
G2 Unique Options	AMD Opteron Processor 8218, Dual-Core (2.6 GHz, 95 Watts) 2P Option Kit	413933-B21
	AMD Opteron Processor 8216, Dual-Core (2.4 GHz, 95 Watts) 2P Option Kit	413932-B21
	AMD Opteron Processor 8214, Dual-Core (2.2 GHz, 95 Watts) 2P Option Kit	416734-B21
	AMD Opteron Processor 8212, Dual-Core (2.0 GHz, 95 Watts) 2P Option Kit	413931-B21

ProLiant Essentials Value Pack Software

ProLiant Essentials Accelerated iSCSI Pack

ProLiant Essentials Accelerated iSCSI Pack, 1 License 407484-B21

NOTE: For additional Accelerated iSCSI Pack License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12466_div/12466_div.HTML

ProLiant Essentials Intelligent Networking Pack

ProLiant Essentials Intelligent Networking Pack – Windows Edition, Single Server License 436225-B21

NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

NOTE: For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML

ProLiant Essentials Intelligent Networking Pack – Linux Edition, Single Server License 436229-B21

NOTE: For additional ProLiant Intelligent Networking Pack – Linux License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML

ProLiant Essentials Performance Management Pack

ProLiant Essentials Performance Management Pack, Single-Server License 306696-B21

NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.

NOTE: The most recent version of the software can always be downloaded at <http://www.hp.com/products/pmp>.

NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML

HP ProLiant Essentials Remote Directory Memory Access (RDMA) Pack

HP ProLiant Essentials RDMA Pack for Embedded Multifunction Gigabit Server Adapters, 1 License 407478-B22

HP ProLiant Essentials RDMA Pack for Standup Multifunction Gigabit Server Adapters, 1 License 407481-B22

NOTE: For additional ProLiant Essentials RDM Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12573_div/12573_div.HTML

ProLiant Essentials Rapid Deployment Pack Windows Edition Release

Rapid Deployment Pack, Single-Server License 267196-B21

NOTE: This license allows 1 server to be deployed and managed via RDP.

Rapid Deployment Pack, Single-Server License (Japan) 267196-291

NOTE: This license allows 1 server to be deployed and managed via RDP.

Options

NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.HTML

ProLiant Essentials Workload Management Pack

ProLiant Essentials Workload Management Pack, Single Server License 303284-B21

NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML

ProLiant Essentials Virtualization Management Software

ProLiant Essentials Virtual Machine Management Pack, Single-Server License 435661-B21

NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

ProLiant Essentials Server Migration Pack, Single-Migration License 435663-B21

NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.

NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.

NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML

ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License 371645-B21

NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to <http://www.hp.com/servers/proliantessentials> or the various ProLiant Essentials Value Pack product QuickSpecs for more information.

NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: <http://www.hp.com/servers/proliantessentials>.

Remote Management

Integrated Lights-Out Advanced Pack

Integrated Lights-Out Advanced Pack, 1 server 263825-B21

Featuring: Sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.

NOTE: For additional Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11052_div/11052_div.HTML

Options

Processors	AMD Opteron Processor 8220SE, 2P Dual-Core (2.8 GHz, 120 Watts) Option Kit	413934-B21
	AMD Opteron Processor 8218, 2P Dual-Core (2.6 GHz, 95 Watts) Option Kit	413933-B21
	AMD Opteron Processor 8216, 2P Dual-Core (2.4 GHz, 95 Watts) Option Kit	413932-B21
	AMD Opteron Processor 8214, 2P Dual-Core (2.2 GHz, 95 Watts) Option Kit	416734-B21
	AMD Opteron Processor 8212, 2P Dual-Core (2.0 GHz, 95 Watts) Option Kit	413931-B21
Memory (DIMMs)	1 GB REG PC2-5300 (2 x 512 MB) single rank	408850-B21
	2 GB REG PC2-5300 (2 x 1 GB) single rank	408851-B21
	4 GB REG PC2-5300 (2 x 2 GB) dual rank	408853-B21
	8 GB REG PC2-5300 (2 x 4 GB) dual rank	408854-B21
Diskette Drive	Slimline Floppy Diskette Drive Option Kit NOTE: Ejectable drive.	390164-B21
Optical Drives	Slimline CD-RW/DVD-ROM Combo Drive Option Kit	331903-B21
	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21
Hard Drives	SFF SATA Hard Disk Drives – Hot Plug	
	HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21
	NOTE: SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.HTML (Worldwide)	
	SFF SAS Hard Disk Drives – Hot Plug	
	HP 146GB 3G SAS 10K SFF SP HDD	431958-B21
HP 72GB 3G SAS 10K SFF SP HDD	375861-B21	
HP 36GB 3G SAS 10K SFF SP HDD	375859-B21	
NOTE: Please see the SFF SAS Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.HTML (Worldwide)		
Storage Controllers	SCSI Controllers for External Drive/Storage Support	
	Smart Array 6402/128 Controller	273915-B21
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 642 Controller	291967-B21
	NOTE: The Smart Array 642 Controller must be placed in the 100MHz slots only.	
128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21	
NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.		

Options

Ultra320 Expansion Module for SA-6402	273911-B21
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
SCSI HBA	
HP SC11Xe Host Bus Adapter	412911-B21
NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML (Smart Array 6400 Series)	
http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML (Smart Array 642)	
http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.HTML (U320 SCSI G2 HBA)	
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.HTML (SC11Xe HBA)	
SAS Controller	
Smart Array P400 Controller	
HP Smart Array P400/256MB Controller	405132-B21
NOTE: The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
HP Smart Array P400/512MB BBWC Controller	411064-B21
NOTE: The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
512MB DDR BBWC Upgrade	405148-B21
NOTE: For Smart Array P400 Controller only.	
Battery-backed write cache upgrade	383280-B21
NOTE: For Smart Array P400 Controller only.	
Smart Array P600 Controller	
HP Smart Array P600/256 BBWC Controller	337972-B21
NOTE: The Smart Array P600 Controller supports internal and external Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.	
512 MB DDR BBWC Upgrade	372538-B21
NOTE: For Smart Array P600 Controller only.	
Smart Array P800 Controller	
HP Smart Array P800/512 BBWC Controller	381513-B21
NOTE: Please see the following Controller QuickSpecs for Technical Specifications and additional information:	
http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.HTML (Smart Array P400 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12247_div/12247_div.HTML (Smart Array P600 Controller)	
http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.HTML (Smart Array P800 Controller)	
SAS HBA	
HP 8 Internal Port SAS HBA with RAID	347786-B21
NOTE: Please see the following Controller QuickSpecs for additional information:	
http://h18000.www1.hp.com/products/quickspecs/12332_div/12332_div.html (8 Internal Port SAS HBA)	

Options

Communications		
	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC340T PCI-X 4-port 1000T Gigabit Server Adapter	391661-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	NOTE: Any NIC on the option list can be used for redundancy with the embedded NC371i NIC. When teaming with other NICs or with the embedded NIC, the lack of Jumbo Frames and LSO features on the NC1020 will cause high end NICs to have those features disabled. (e.g. incompatibility issues with the other option NICs for that platform).	
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21
	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21

Redundant Options		
	910W (low line), 1300W (high line) Hot Plug Redundant Power Supply US – includes Nema 5-15P to IEC320-C19	348114-001
	910W (low line), 1300W (high line) Hot Plug Redundant Power Supply – includes C14 to C19 IEC cable	348114-B21

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see: <http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

For recommended tape drive offerings for this ProLiant server see the following:

USB Tape Drives

HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite) DW026A

NOTE: HP recommends combining this tape drive with the 1U USB Rack-Mount kit (A8007A) for a complete rack-mount solution.

SAS Tape Drives

NOTE: Connecting hard drive cage and SAS tape to the same 8 Internal Port SAS HBA (347786-B21) using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

HP StorageWorks Ultrium 448 SAS Internal Tape Drive DW085A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

HP StorageWorks Ultrium 920 SAS Internal Tape Drive EH847A

NOTE: HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

NOTE: Please refer to the "Tape Drives, Tape Autoloaders & Tape Libraries" table in the Storage section of this document for a list of SAS controllers with tape support.

Ultrium Tape Drives

Options

HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite) DW064A

NOTE: HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 460 (Carbon) 350546-B22

HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 448 SCSI Tape Drive (Carbonite) DW028B

HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 920 EH903A

HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 960 (Carbonite) Q1595B

NOTE: Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:

http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html
(Worldwide)

http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html
(Worldwide)

For an up-to-date listing of the latest O/S and software support details for HP Ultrium tape drives, please visit: <http://www.hp.com/go/connect>

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U Rack-Mount Kit A7445B

NOTE: The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit A8007A

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

NOTE: The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS tape drive.

NOTE: Connecting hard drive cage and SAS tape to the same 8 Internal Port SAS HBA (347786-B21) using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

HP StorageWorks 3U Rack-mount kit 274338-B22

NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DLT VS160, SDLT 320, SDLT 600, Ultrium 232, Ultrium 460, Ultrium 448, Ultrium 920 and Ultrium 960 tape drives.

NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:

http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.HTML
(Worldwide)

Options

Tape Autoloaders

HP StorageWorks DAT Autoloader

HP StorageWorks DAT 72x10 tape autoloader AE313A

HP StorageWorks 1/8 Tape Autoloader

HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader AH165A

HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader AH164A

HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader AH163A

HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A

NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions

NOTE: Please reference the Autoloader QuickSpecs at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at

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

Tape Libraries

HP StorageWorks MSL2024 Tape Library

HP StorageWorks MSL2024 1 Ultrium 960 Drive Library AG115A

HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Drive Library AG326B

HP StorageWorks MSL2024 1 Ultrium 920 Drive Library AH169A

HP StorageWorks MSL2024 2 Ultrium 920 Drive Library AH170A

HP StorageWorks MSL2024 1 Ultrium 448 Drive Library AG116A

HP StorageWorks MSL2024 2 Ultrium 448 Drive Library AG117A

HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 Ultrium 448 Drive Library AG320A

HP StorageWorks MSL4048 2 Ultrium 448 Drive Library AG321A

HP StorageWorks MSL4048 1 Ultrium 920 Drive Library AH171A

HP StorageWorks MSL4048 2 Ultrium 920 Drive Library AH172A

HP StorageWorks MSL4048 1 Ultrium 960 Drive Library AG322A

HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Drive Library AG324B

HP StorageWorks MSL4048 2 Ultrium 960 Drive Library AG323A

HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Drive Library AG325B

HP StorageWorks MSL6000 Tape Library

Ultrium 960 technology

HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library AD606B

HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library AD608B

HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library AD607B

HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library AD609B

Ultrium 460 technology

HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library AD598B

HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library AD600B

HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library AD599B

HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library AD601B

NOTE: Please reference the MSL2024, MSL4048 and MSL6000 Tape Library QuickSpecs at <http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>.

Options

HP Data Protector Express Software	HP DP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server	BB118AA

NOTE: Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software:
http://h18000.www1.hp.com/products/quickspecs/12337_div/12337_div.html
 (Worldwide)

NOTE: To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.6 or later).

Cluster Options	ProLiant Cluster Starter Kit	364023-B22
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NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html
 (Worldwide)

HP HA/F200 for Entry SAN Cluster	364026-B22
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NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html
 (Worldwide)

ProLiant Cluster HA/F500 for the Enterprise SAN	364024-B21
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NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html
 (Worldwide)

HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit)	305199-B26
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HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version)	307754-B26
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HP Serviceguard for Linux and Red Hat Global File System – 1 year subscription	T2798AA#001
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HP Serviceguard for Linux and Red Hat Global File System – 3 years subscription	T2798AA#003
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NOTE: For additional information regarding HP Serviceguard for Linux, please see the following QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html
 (Worldwide)

Options

StorageWorks Options	<p>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</p> <p>HP StorageWorks FC2142SR 4Gb PCI-e HBA A8002A</p> <p>HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA A8003A</p> <p>HP StorageWorks FC1142SR 4Gb PCI-e HBA AE311A</p> <p>HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA AE312A</p> <p>HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA AD167A</p> <p>HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA AD168A</p> <p>HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA AB429A</p> <p>HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA AE369A</p>
HP StorageWorks Modular Smart Array 20	<p>HP StorageWorks Modular Smart Array 20 335921-B21</p> <p>NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.</p> <p>HP StorageWorks Modular Smart Array 20 Starter Kit 366172-B21</p> <p>NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller.</p> <p>NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.</p>
HP StorageWorks Modular Smart Array 30	<p>HP StorageWorks Modular Smart Array 30 SB 302969-B21</p> <p>NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies</p> <p>HP StorageWorks Modular Smart Array 30 DB 302970-B21</p> <p>NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies</p> <p>NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.</p>
HP StorageWorks Modular Smart Array 50	<p>HP StorageWorks Modular Smart Array 50 Enclosure 364430-B21</p> <p>NOTE: Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.HTML (Worldwide)</p>
HP StorageWorks Modular Smart Array 500	<p>HP StorageWorks Modular Smart Array 500 Generation 2 335880-B21</p> <p>NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_div/11956_div.HTML (Worldwide)</p>

Options

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
Uninterruptible Power Systems – Rack	HP, R1.5kVA UPS, 1U, NA AF419A HP, R1.5kVA UPS, 1U, INTL AF418A HP, R1.5kVA UPS, 1U, JPN/TW AF421A HP R3000 VA UPS, 2U, DTC, INTL AF414A NOTE: Replaces non-RoHs compliant part numbers 192186-B31, 192186-B32, 192186-B33, 192186-AR1. HP R3000 VA UPS, 2U, L5-30, NA AF422A NOTE: Replaces non-RoHs compliant part number 192186-001. HP R3000 VA UPS, 2U, L6-20, NA AF423A NOTE: Replaces non-RoHs compliant part number 192186-002. HP R3000 VA UPS, 2U, L6-20, JPN AF424A NOTE: Replaces non-RoHs compliant part number 192186-292. HP R3000 VA UPS, 2U, L5-30, JPN AF425A NOTE: Replaces non-RoHs compliant part number 192186-291. HP R5500 VA UPS, INTL AF416A NOTE: Replaces non-RoHs compliant part number 326529-B31. HP R5500 VA UPS, NA/JPN AF426A NOTE: Replaces non-RoHs compliant part number 326529-D71.	
HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version HP 17.3 kVA S2324 Monitored PDU – dual input, 3U, 24A (NA/JPN) AF503A NOTE: Replaces non-RoHs compliant part number 370959-D71. HP 8.3 kVA S1324 Monitored PDU – single input, 3U, 24A (NA/JPN) AF504A NOTE: Replaces non-RoHs compliant part number 370960-D71. HP 16.6 kVA S2140 Monitored PDU – dual input, 1U, 40A (NA/JPN) AF505A NOTE: Replaces non-RoHs compliant part number 37061-D71. HP 8.6 S1140 Monitored PDU – single input, 1U, 40A (NA/JPN) AF506A NOTE: Replaces non-RoHs compliant part number 370962-D71. HP 22.1 kVA S2316 Monitored PDU – dual input, 3U, 16A (INTL) AF507A NOTE: Replaces non-RoHs compliant part number 370963-B31. HP 11 kVA S1316 Monitored PDU – single input, 3U, 16A (INTL) AF508A NOTE: Replaces non-RoHs compliant part number 370964-B31. HP 14.7 kVA S2132 Monitored PDU – dual input, 1U, 32A (INTL) AF509A NOTE: Replaces non-RoHs compliant part number 370965-B31.	

Options

HP 7.3kVA S1132 Monitored PDU – single input, 1U, 32A (INTL) NOTE: Replaces non-RoHs compliant part number 370966-B31.	AF510A
HP Monitored Power Distribution Unit: Half Rack Version	
HP 17.3 kVA S348 Monitored PDU – single input, 3-phase, 60A (NA/JPN)	AF916A
HP 22 kVA S332 Monitored PDU – single input, 3-phase, 32A (INTL)	AF917A
HP 4.9kVA S124 Monitored PDU – single input, 1U, 24A (NA/JPN)	AF914A
HP 7.3kVA S132 Monitored PDU – single input, 1U, 32A (INTL) NOTE: Replaces non-RoHs compliant part number 370966-B31.	AF915A

Modular Power Distribution Units 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) NOTE: This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPS R3000 XR. For North America, need to order cable PN 340653-001. NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide)	252663-B24

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#xxx
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
	HP 512MB DriveKey II- USB Flash Drive	ED516AA

Third Party Rack Kit	3rd Party Rack Kit (ALL) NOTE: The rack kit (PN 287528-B21) provides support for any rack, square hole or round hole, (including HP Rack System /E and HP Systems), with an adjustment range from 23 ½" – 34" deep. NOTE: The Third party rack kit is required for round hole racks or for square hole racks that do not conform to the adjustment range of the standard rail that ships with the server.	287528-B21
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Options

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled NOTE: Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.HTML (Worldwide) NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	358254-B21
HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet – Pallet 10642 G2 (42U) Rack Cabinet – Shock Pallet 10642 G2 (42U) Rack Cabinet – Crated 10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet 10636 G2 (36U) Rack Cabinet – Pallet 10636 G2 (36U) Rack Cabinet – Shock Pallet 10636 G2 (36U) Rack Cabinet – Crated 10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed. NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: 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 .	AF001A AF002A AF003A AF004A AF011A AF012A AF013A AF014A
HP Rack 10000 Series (Graphite Metallic)	Rack, HP Infrastructure 42U (HV) Rack, HP Infrastructure 42U (LV) HP Rack S10614 (14U) Rack Cabinet – Shock Pallet HP Rack 10842 (42U, 800mm wide) – Pallet HP Rack 10842 (42U, 800mm wide) – Shock Pallet HP Rack 10647 (47U) – Pallet HP Rack 10647 (47U) – Crated HP Rack 10622 (22U) – Pallet HP Rack 10622 (22U) – Shock Pallet HP Rack 10622 (22U) – Crated NOTE: xxxxx-B21 (pallet) used to ship empty racks shipped on a truck. -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxx-B23 (crated) used for air shipments of empty racks. NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed.	379005-001 379006-001 292302-B22 257415-B21 257415-B22 245160-B21 245160-B23 245163-B21 245163-B22 245163-B23

Options

NOTE: Please see the Rack 10000 QuickSpecs for additional options and Technical Specifications such as height, width, depth, weight, and color:

http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML
(Worldwide)

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

Keyboards and Monitors	TFT7210R Rack Mounted 17" Monitor	348373-B21
	NOTE: For a complete list of Monitors please view the following URL: http://www.hp.com/go/kvm .	
	TFT7600 Rackmount Keyboard Monitor US	AG052A
	TFT7600 Rackmount Keyboard Monitor UK	AG053A
	TFT7600 Rackmount Keyboard Monitor GR	AG054A
	TFT7600 Rackmount Keyboard Monitor FR	AG055A
	TFT7600 Rackmount Keyboard Monitor IT	AG056A
	TFT7600 Rackmount Keyboard Monitor SP	AG057A
	TFT7600 Rackmount Keyboard Monitor DEN	AG058A
	TFT7600 Rackmount Keyboard Monitor NOR	AG059A
	TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
	TFT7600 Rackmount Keyboard Monitor SWI	AG061A
	TFT7600 Rackmount Keyboard Monitor PORT	AG062A
	TFT7600 Rackmount Keyboard Monitor BEL	AG063A
	TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
	TFT7600 Rackmount Keyboard Monitor RUS	AG065A
	TFT7600 Rackmount Keyboard Monitor INTL	AG066A
	1U Rackmount Keyboard with USB, US	AG072A
	1U Rackmount Keyboard with USB, UK	AG073A
	1U Rackmount Keyboard with USB, GR	AG074A
	1U Rackmount Keyboard with USB, FR	AG075A
	1U Rackmount Keyboard with USB, ITL	AG076A
	1U Rackmount Keyboard with USB, SP	AG077A
	1U Rackmount Keyboard with USB, DEN	AG078A
	1U Rackmount Keyboard with USB, NOR	AG079A
	1U Rackmount Keyboard with USB, SE/FI	AG080A
	1U Rackmount Keyboard with USB, SWI	AG081A
	1U Rackmount Keyboard with USB, PORT	AG082A
	1U Rackmount Keyboard with USB, BEL	AG083A
	1U Rackmount Keyboard with USB, JPN2	AG084A
	1U Rackmount Keyboard with USB, RUS	AG085A
	1U Rackmount Keyboard with USB, INTL	AG086A
	NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower .	

Options

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter – 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x 4 USB/PS2 KVM Switch, TT (NA/JPN)	371301-D71
	HP 1x 4 USB/PS2 KVM Switch, TT (AU/NZ)	371301-011
	HP 1x 4 USB/PS2 KVM Switch, TT (UK)	371301-031
HP 1x 4 USB/PS2 KVM Switch, TT (EU)	371301-A21	
HP 1x 4 USB/PS2 KVM Switch, RM (ALL)	371302-B21	
HP PS2 KVM Cable with audio, 6', 2-pack	371730-B21	
HP USB KVM Cable with audio, 6', 2-pack	371729-B21	
NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.		

HP Serial Console Server Options	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.		

Options

Service and Support Offerings (HP Care Pack Services)	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4607E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4608E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4609E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4617E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4618E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4619E
Support Plus 24		
Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4620E	
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	U6316E	
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	U9239E	

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

Memory

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

HP ProLiant DL585 G2 2P Models

Standard Memory

4 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz or
2 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 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.

NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 677 MHz.

The following memory options are available from HP:

- 1 GB REG PC2-5300 (2 x 512 MB) single rank 408850-B21
- 2 GB REG PC2-5300 (2 x 1 GB) single rank 408851-B21
- 4 GB REG PC2-5300 (2 x 2 GB) dual rank 408853-B21
- 8 GB REG PC2-5300 (2 x 4 GB) dual rank 408854-B21

Standard Memory Configuration (2.0GHz, 2.2GHz and 2.4GHz models)								
Total Memory = 2 GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	512 MB	512 MB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	512 MB	512 MB	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
Standard Memory Configuration (2.6GHz model)								
Total Memory = 4 GB								
	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1 GB	1 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
Standard Memory Configuration (2.8GHz model)								
Total Memory = 8 GB								

Memory

	1 (Slot furthest from processor)	2	3	4	5	6	7	8 (Slot closest to processor)
Processor 1 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty

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

Example #1: Optional Memory Configuration with DIMM mixing

Standard Memory plus Optional Memory and Processors

Total Memory = 34 GB

	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB	512 MB	512 MB
Processor 2 Memory Bus	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB	512 MB	512 MB
Processor 3 Memory Bus	2 GB	2 GB	2 GB	2 GB	1 GB	1 GB	512 MB	512 MB
Processor 4 Memory Bus	1 GB	1 GB	1 GB	1 GB	1 GB	1 GB	512 MB	512 MB

Example #2: Optional Memory Configuration with Partial Bus Population

Standard Memory plus Optional Memory and Processors

Total Memory = 8 GB

	1	2	3	4	5	6	7	8
Processor 1 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 2 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 3 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Processor 4 Memory Bus	512 MB	512 MB	512 MB	512 MB	Empty	Empty	Empty	Empty

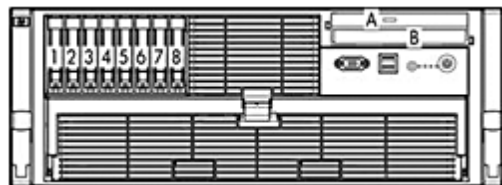
Example #3: Maximum Memory Configuration

Maximum Memory (Standard replaced with Optional Memory)

Total Memory = 128 GB

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

Storage



A	Ejectable: Slimline Diskette or Optical Drive (Optional)
B	Ejectable: Slimline DVD/CD-RW (Standard)
1-8	SFF SAS Internal Drive cage

Drive Support

	Quantity Supported	Position Supported	Controller
Ejectable Slimline Drives			
1.44-MB slimline Diskette Drive	Up to 1	A or B Based on Boot Device Selector Switch	Integrated
IDE slimline CD-ROM Drive	Up to 2	A or B	Integrated IDE
Slimline DVD-ROM Drive (8X/24X) Option Kit	Up to 2	A or B	Integrated IDE

Hard Drives

SATA – Hot Plug Drives			
	Quantity Supported	Position Supported	Controller
60GB 1.5G SATA 5.4K	Up to 8	1-8	HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller
SFF SAS – Hot Plug Drives			
	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP	Up to 8	1-8	HP Smart Array P400/256MB Controller HP Smart Array P400/512MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller
72GB 3G SAS 10K SP			
36GB 3G SAS 10K SP			

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20 Family	1 per SCSI VHDCI connector	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller
Modular Smart Array 30 Family	Up to 13	External	Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller
Modular Smart Array 50 Enclosure	2 per connector (supports 1 + 1 cascading)	External	HP Smart Array P600/256 BBWC Controller
Modular Smart Array 1000	Please see the Modular Smart Array 1000 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs
Modular Smart Array 1500 cs	Please see the Modular Smart Array 1500 cs QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 1500 cs QuickSpecs (URL below) for the latest list of supported HBAs

Modular Smart Array 1000:

http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)

Modular Smart Array 1500 cs: <http://www.hp.com/go/MSA1500cs>

Maximum Storage Capacity – (External Enclosure Attached)

Internal	1.168TB (8 x 146GB SFF SAS Drives)
External	5.840TB (2 MSA50 Enclosures 20 drives per enclosure x 146GB SFF SAS Drives)
Total	7.008TB

Tape Drives, Tape Autoloaders, and Tape Libraries

Storage

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
<http://h18000.www1.hp.com/products/quickspecs/Division/10233.html> (Worldwide)

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders & Tape Libraries listed below, please see the following:
<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

NOTE: Connecting hard drive cage and SAS tape to the same 8 Internal Port SAS HBA (347786-B21) using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

For details on connecting tape drives to this server, see the following:

	Position Supported	Controller	Controller Part Number
HP StorageWorks Tape Drives, USB External DAT 24 USB DAT 40 USB DAT 72 USB	External	USB 2.0 Port	N/A
HP StorageWorks Tape Drives, SCSI External Ultrium 232 Ultrium 448 Ultrium 460 Ultrium 920 Ultrium 960 DAT 40 DAT 72 DLT VS80 DLT VS160 SDLT 320 SDLT 600	External	HP SC11Xe Host Bus Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	412911-B21 374654-B21
HP StorageWorks Tape Drives, SAS External Ultrium 448 SAS	External	HP 8 Internal Port SAS HBA with RAID 0/1 NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements. HP Smart Array P800/512 BBWC Controller NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21 381513-B21
HP StorageWorks Autoloaders, External DAT 72x10 Autoloader 1/8 G2 Tape Autoloader	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21

Storage

HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit	External	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
HP StorageWorks USB Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit	External	HP 8 Internal Port SAS HBA with RAID 0/1 HP Smart Array P800/512 BBWC Controller	347786-B21 381513-B21
HP StorageWorks Tape Libraries, External MSL2024 (Ultrium 448, Ultrium 920 and 960-based) MSL4048 (Ultrium 448, Ultrium 920 and 960-based) MSL6000 (Ultrium 960 and 460-based) MSL6000 (SDLT 600-based)	External	Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information.	N/A

Power Specifications

Part number	348114-001
Operational Input Voltage Range (Vrms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	910	910	1300	1300	1300	1300
Nominal Input Current (A rms)	11.9	10.2	7.7	7.3	6.9	6.6
Max Rated Input Wattage Rating (Watts)	1163	1148	1566	1566	1548	1548
Max. Rated VA (Volt-Amp)	1186	1172	1598	1598	1579	1579
Efficiency (%)	80	81	83	83	84	84
Power Factor	0.98		0.98			
Leakage Current (mA)	0.43	0.50	0.90	0.96	1.00	1.04
Max. Inrush Current (A peak)	100	100	100	100	100	100
Max. Inrush Current duration (mS)	10					

***NOTE:** – To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at url: <http://h30099.www3.hp.com/configurator/powercalcs.asp>
To drill down to calculators:

- Click on : "ProLiant Servers"
- Click on the Server of interest. Example : DL585 G2
- Click on : "Power Calculator" link. (You may need to scroll down to see it)
- There are certain Dual-core, lowline, max configurations that are not supported. All highline configurations are supported. Consult the Power Calculator to determine if your lowline configuration is supported.

Standard Rack Model Power Cords / Jumper Cords	Description
Asia Pacific	IEC320-C14 to IEC320-C19 Jumper Cord
Europe	IEC320-C14 to IEC320-C19 Jumper Cord
Japan	JIS C8303 to IEC320-C19 IEC320-C14 to IEC320-C19 Jumper Cord
PRC	IEC320-C14 to IEC320-C19 Jumper Cord
USA	Nema 5-15P to IEC320-C19 IEC320-C14 to IEC320-C19 Jumper Cord

Power Specifications

Optional Country Power Cords and Jumper Cords	Description	Option Kit Part Number
Australia/New Zealand	AS/NZS 3112 to IEC320-C19	305340-011
Denmark/Switzerland	IEC320-C19, Industrial	305340-081
Europe	CEE 7 to IEC320-C19	305340-021
Italy	IEC320-C19, Italy	305340-061
South Africa/India	IEC320-C19, SA	305340-AR1
UK	BS1363 to IEC320-C19	305340-031
US	Nema 5-15P to IEC320-C19	235603-001
US	Nema 6-20P to IEC320-C19	235604-001
US	Nema L6-20P to IEC320-C19, 20A, 250V, US	340653-001
WW	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 6 ft/2.0m)	313227-B21
WW	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 8 ft/2.5m)	291034-B21
WW	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 10 ft/3.0m)	310927-B21
WW	IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 12ft/3.7m)	313228-B21
WW	IEC320-C19 to IEC320-C20 Jumper (16A, IEC, 8ft/2.5m)	295633-B22

Technical Specifications

System Unit Rack	Chassis Footprint (HxWxD)	6.94 x 19 x 26.5 in (17.6 x 48.3 x 67.3 cm)		
	Weight No hard drives installed, one power supply	66 lb (29.9 kg)		
	Input Requirements	Rated Input Voltage	100 to 120 VAC/200 to 240 VAC	
		Rated Input Frequency	50 to 60 Hz	
		Input Power	1135W @ 110 VAC/1125W @ 220 VAC	
		Rated Input Current	12A (100 VAC), 9.8A (120 VAC), 4.9A (220 VAC)	
	Max BTU Rating	4070 BTU		
	Power Specifications	To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/powercalcs.asp .		
		To drill down to calculators: <ul style="list-style-type: none"> • Click on: "ProLiant Servers" • Click on the Server of interest. Example: DL585 G2 • Click on: "Power Calculator" link (You may need to scroll down to see it.) 		
	Power Supply Output Power (per power supply)	Rated Steady-State Power	800W/800W (lowline/highline)	
Maximum Peak Power		800W/800W (lowline/highline)		
Temperature Range	Operating	50° to 95° F (10° to 35° C)		
	Non-operating	-20° to 140° F (-29° to 60° C)		
	Shipping	-22° to 122° F (-30° to 50° C)		
Relative Humidity (non-condensing)	Operating	10% to 70%		
	Non-operating	5% to 95%		
Maximum Wet Bulb Temperature	101.7° F (38.7° C)			
Acoustic Noise	NOTE: Listed are the declared A-weighted sound power levels LWAd and the declared average bystander position sound pressure levels LpAm when operating in a 23° C ambient environment. Noise emissions were measured in accordance with ECMA 74 and declared in accordance with ECMA 109.			
	Idle (Fixed Disk Drives Spinning)			
		L WAd (BELS)	7.3	
		L pAm (dBA)	55	
	Operating Minimum (Random Seeks to Fixed Disks)			
		L WAd (BELS)	7.3	
		L pAm (dBA)	55	
	NOTE: These values apply to 4U rack configuration with the Health Driver Fan Control active. Configuration tested included 2 AMD Opteron 2.2 GHz processors, 1 15 krpm hard drive, 2 power supplies, 4 memory/IO fans and 4 CPU fans.			

Technical Specifications

24X Max (or higher) IDE CD-ROM Drive Slim Line	Disk	Applicable Disk	CD-DA, CD-ROM (Mode 1 and 2) CD-XA, CD-I (Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) Mixed Mode (Audio and Data combined)
		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
		Diameter	4.7 x 3.15 in (12 x 8 cm)
		Rotational Speed	4200 rpm maximum
		Center Hole	0.6 in/15 mm diameter
		Thickness	1.2 mm
		Track Pitch	1.6 μ m
	Block Size	Mode 1	2,048
		Mode 2	2,340, 2,336, 1,024 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE (ATAPI)	
	Access Times (typical)	Random	100 ms
		Full-Stroke	2000 ms
	Audio Output Level	Line-Out	0.7 Vrms at 47 kOhms
	Headphone	0.6 Vrms at 32 kOhms (maximum volume)	
Data Transfer Rate	Sustained	150 KB/s (sustained 1X)	
	Burst	2100 to 3600 KB/s	
Cache Buffer	128 KB		
Start-up Time (typical)	< 7seconds		
Stop Time	< 4seconds		
Laser Parameters	Type	Semiconductor Laser GaAlAs	
	Wave Length	780 \pm 25 nm	
	Divergence Angle	53.5 $^{\circ}$ \pm 1.5 $^{\circ}$	
	Output Power	0.14 mW	
Operating Conditions	Temperature	41 $^{\circ}$ to 113 $^{\circ}$ F (5 $^{\circ}$ to 45 $^{\circ}$ C)	
	Humidity	10% to 80%	
Dimensions	(HxWxD, maximum)	1.69 x 5.75 x 8.19 in (4.29 x 15 x 20.8 cm)	
	Weight	2.66 lb (1.2 kg)	

Slim Line CD-RW/DVD-ROM 24X Combo Drive (Multibay)

Shipping Dimensions
Shipping Weight
Disk

13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm)

5 lb (2.27 kg)

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

Technical Specifications

		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)
			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

Integrated Lights-Out 2 Standard (integrated on system board)	Architecture	32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit)
	Processor	32-bit RISC processor core running at 66 MHz
	Upgradeability	Option firmware upgradeable via flash ROM
	Video Support	Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors)
	Interfaces	One Ethernet network connection (10/100 Mb/s)
	Memory	2-MB Flash ROM 8-MB SDRAM
	Operating System Support	Windows 2000 Server Windows 2000 Advanced Server Red Hat 7.x SuSE 7.0
	Client Browser Support	Microsoft Internet Explorer 5.5 or later.
	iLO 2 Standard Features	Virtual Text Remote Console Virtual KVM Virtual Power Button Control Virtual UID Control Power Regulator Control Dedicated LAN Connectivity Secure access using web browser Secure access using Secure Shell (SSH) client Serial connectivity Automatic IP Configuration via DHCP/DNS/WINS Industry Standard 128-bit Secure Sockets Layer (SSL) Security IML and iLO2 Event Logging Support for up to 12 user accounts with customizable access privileges
	iLO Advanced Features (optional)	Virtual Graphical Remote Console Virtual Floppy/USB Key drive Virtual CD-ROM drive Directory Services Integration Processor States Reporting Terminal Services Integration

Technical Specifications

Smart Array P400 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)
	Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature

Embedded NC373i 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)	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000 Mb/s
Connector	RJ-45		
Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)	
	10/100/1000 Base-TX	Category 5 UTP up to 328 ft (100 m)	

Technical Specifications

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