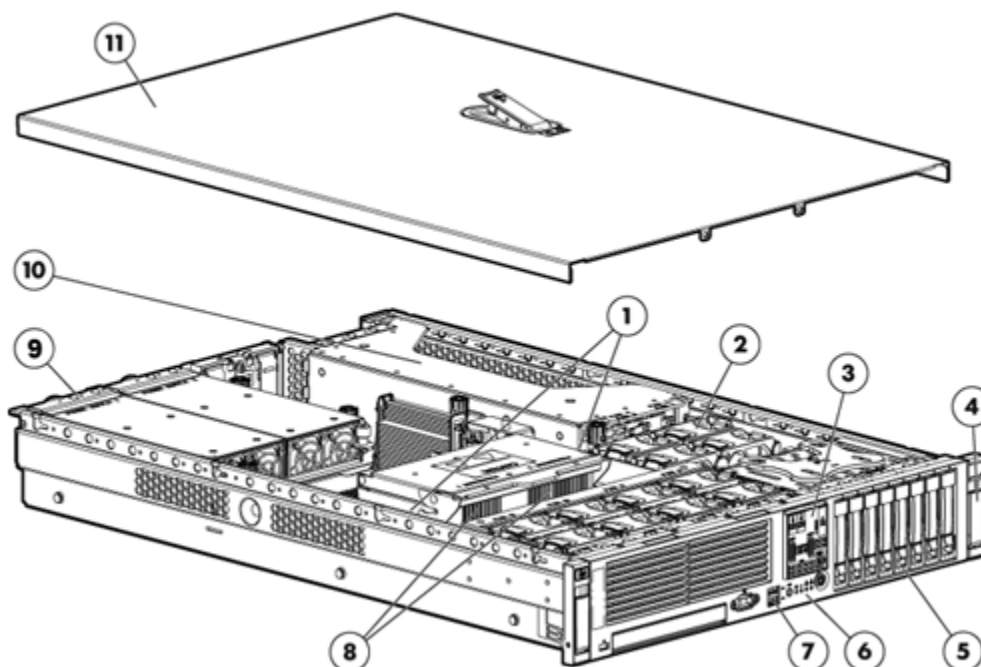


Overview



- | | |
|--|--|
| 1. Eight sockets for PC2-5300 DIMMs (DDR2-667) with Advanced ECC | 7. Two front USB ports |
| 2. Hot-plug fans, full redundancy | 8. AMD Dual Core Rev. F Processor (Performance models include two processors) |
| 3. Systems Insight Display | 9. Hot plug power supply, redundancy option (High performance models include redundant power supply) |
| 4. Quick release lever for rapid server access | 10. Four available PCI-E non-hot plug expansion slots (or optional mixed PCI-X/E expansion cage) |
| 5. Support for eight Small Form Factor hot plug hard drives bays | 11. Quick removal access panel |
| 6. Front LEDs (show server status) and Unit Identification button/LED (for easy in rack server identification) | |

At A Glance

The HP ProLiant DL385, the world's largest selling AMD server, delivers on its history of design excellence with enterprise-class uptime and manageability, proven 2-way, dual core AMD Opteron performance, and 2U density for a variety of rack deployments and applications.

● Processors:

- AMD Dual-core Rev F , 2000 series processors with 2MB Level 2 cache for blazing performance; systems support up to 2 processors (2 processors standard on all Performance models)
- Preconfigured Performance models save valuable deployment time at a discounted bundle price
- Serverworks HT-2100 Northbridge and HT1000 Southbridge chipset

● Memory:

- Up to 32 GB PC2-5300 DIMMs (DDR2-667). Standard models support 2:1 Interleaving. Bank Interleaving (Data saved across 2 pairs of DIMMs) and Node interleaving supported (data saved across 2 processors memory sets) also available.

● Storage Controller:

- Performance Models: Smart Array P400/512MB BBCW Controller (RAID 0/1/5/6)
- Base Models: Smart Array P400/256MB Controller (RAID 0/1/5)
 - Upgrade to 512 MB cache w/o Battery Backed Cache module, optional BBWC
- Entry Model: Smart Array E200/64MB Controller (RAID 0/1)
 - Upgrade to 128 MB cache, adds Raid 5 and BBWC

Overview

- **Internal Drive Support:**
 - (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
- **Network Controller:**
 - Embedded NC371i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits
- **Expansion Slots:**
 - 4 Total PCI-Express slots: three x8 and one x4.
 - Optional mixed 2 PCI-X / two x8 PCI-Express and Optional cage with PCI with two x8, one x16 and one x4 configurations available
- **USB 2.0 Ports:**
 - 5 total ports: (2) ports up front; (2) ports in back; (1) port internal
- **Redundancy:**
 - Fully redundant hot plug fans (12 total)
 - Hot plug power supply with optional redundancy (Included in Performance models)
- **Management:**
 - New Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
 - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart
 - System Insight Display on the front bezel for quick and easy server diagnostics
- **Form Factor:**
 - Rack (2U), (3.5-inch)
- **Deployment/Serviceability:**
 - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability
 - Tool-less access to all system components for easy in rack serviceability
- **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

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

Processor One of the following depending on Model	AMD Opteron Processor 2218 High Performance Model (2.6 GHz / 95 Watts 2P, RPS, Smart Array P400/512MB BBWC Controller DVD/CDRW)	
	AMD Opteron Processor 2218 (2.6 GHz, 95 Watts)	
	AMD Opteron Processor 2216 HE (2.4 GHz, 68 Watts)	
	AMD Opteron Processor 2216 (2.4 GHz, 95 watts)	
	NOTE: CTO only.	
	AMD Opteron Processor 2214 HE (2.2 GHz, 68 Watts)	
	AMD Opteron Processor 2212 HE (2.0 GHz, 68 Watts)	
	NOTE: CTO only.	
	AMD Opteron Processor 2210 HE (1.8 GHz, 68 Watts)	
	AMD Opteron Processor 2210 (1.8 GHz, 95 Watts)	
NOTE: CTO only.		
NOTE: Up to 2 processors supported. High Performance Model configurations include two processors, Upgraded memory to 512, BBWC and Redundant Power Supply.		

Cache Memory	2MB (2 x 1MB) Level 2 cache (2000 series) NOTE: 1MB Level 2 cache per core.
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Chipset	Serverworks HT-2100 Northbridge and HT1000 Southbridge Chipset
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Upgradeability	Upgradeable to 2 processors
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Memory Protection	Advanced ECC
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Memory	Type	PC2-5300 DIMMs (DDR2-667) Standard models support 2:1 Interleaving, with Bank Interleaving (Data saved across 2 pairs of DIMMs) and Node interleaving supported (data saved across 2 processors memory sets) available.
	Standard (Entry Models)	1GB (2 x 512 MB)
	Standard (Base Models)	2 GB (2 x 1 GB)
	Standard (Performance Models)	4 GB (4 x 1 GB)
	Maximum	32 GB (8 x 2 GB)

Network Controller	Embedded NC371i Multifunction Gigabit Server Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI and RDMA through optional ProLiant Essentials Licensing Kits
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Standard Features

Expansion Slots

Embedded Slots	Slot Number	Bus Speed	Bus Number**	Device Number***	Hot Plug	PCI Voltage
	1	X8 PCIe	70	0	no	N/A
	2	X8 PCIe	67	0	no	N/A

NOTE: For Base and Performance Models, the Smart Array P400/256MB Controller is installed in Slot 1.

NOTE: For Entry Model, the Smart Array E200/64 MB Controller is installed in Slot 3.

****NOTE:** Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

*****NOTE:** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

PCIe Riser	Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
	3	x4 PCIe	11	0	no	N/A
	4	x8 PCIe	8	0	no	N/A
	5	x8 PCIe	5	0	no	N/A

***NOTE:** x4 slots support x8 cards, but will run at x4 speeds. x8 slots supports x16 cards, but will run at x8 speeds.

****NOTE:** Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

*****NOTE:** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

PCIe/PCI-X Riser (Optional)	Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
	3	x8 PCIe	10	0	no	N/A
	4	64-bit/133MHz PCI-X	6	1	no	3.3 Volt
	5	64-bit/133MHz PCI-X	6	2	no	3.3 Volt

***NOTE:** x8 slot supports x16 cards, but will run at x8 speed.

****NOTE:** Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

*****NOTE:** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

PCIe/ x16 Riser (Optional)	Slot Number	Bus Speed*	Bus Number**	Device Number***	Hot Plug	PCI Voltage
	3	x4 PCIe	8	0	no	N/A
	4	x16 PCIe	5	0	no	3.3 Volt

***NOTE:** x4 slot support x8 cards, but will run at x4 speed.

****NOTE:** Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

*****NOTE:** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).



Standard Features

Storage Controller One of the following depending on Model	Performance Models:	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/5/6)
	Base Models:	HP Smart Array P400/256MB Controller (RAID 0/1/5) Available upgrades: 512MB memory module for RAID 0/1/5/6, battery for battery-backed write cache (BBWC).
	Entry Models:	HP Smart Array E200/64MB Controller (RAID 0/1) Available upgrades: 128MB memory module for RAID 0/1/5, battery for battery-backed write cache (BBWC).

Storage	Diskette Drive	None Standard
	Optical Drive	None Standard
	One of the following depending on Model	IDE DVD-ROM/CDRW Combo included on Performance models
	Hard Drives	None Standard

Maximum Internal Storage	Hot Plug SAS	1.168TB	8 x 146GB with standard internal hot plug SFF SAS drive cage
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Remote Management	Integrated Lights Out 2 (iLO 2) Standard Management: <ul style="list-style-type: none">• 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
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Intelligent Manageability	HP Systems Insight Manager SmartStart Management Agent Redundant ROM Remote Flash ROM ROM-Based Setup Utility (RBSU) Integrated Management Log Automatic Server Recovery (ASR) Dynamic Sector Repairing (with Smart Array controller) Drive Parameter Tracking (with Smart Array controller) Hot Spare Boot NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor. Pre-Failure Warranty (covers processors, SAS hard drives and memory)
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Standard Features

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	VGA	2 (1 front, 1 back)
	Network RJ-45	2
	iLO 2 remote management port	1
	USB 2.0 Ports	5 (2 front, 2 back, 1 inside)
	NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html .	
Graphics	Integrated ATI ES1000 1280 x 1024 x 16M color (32MB video standard)	
Form Factor	Rack (2U), (3.5-inch)	
ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	<p>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.</p> <p>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.</p> <p>HP SIM provides organizations with the following benefits:</p> <ul style="list-style-type: none">• 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	<p>SmartStart simplifies server setup by providing a quick, easy way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/manage.</p> <p>SmartStart version supported (minimum): SmartStart 7.51</p>

Standard Features

Insight Management Agents

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,

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>

Subscriber's Choice

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 alerts on updates as they become available.

ROMPaq, support software, and configuration utilities

The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options Available in SmartStart or downloadable from the Software and Drivers download pages at <http://www.hp.com/go/support>.

Insight Diagnostics

The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.

Optional ProLiant Essentials Value Packs

Optional software offerings that extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- 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 7-day, 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

Standard Features

- patches as well 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.
 - Integrated Lights-Out Select Pack - upgrades the iLO 2 processor with virtual media, power management and enterprise security for text console environments.

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 2.0 Compliant
- PCI 2.2 Compliant
- WOL Support
- Microsoft® Logo certifications
- USB 2.0 Support

Security

- Power-on password
- Keyboard password
- Diskette drive control
- Diskette boot control
- QuickLock, Network Server Mode
- Parallel and serial interface control
- Administrator's password
- Disk configuration lock



Standard Features

Server Power Cords	One Highline IEC Power cord ships standard (6')
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 .
Power Supply	800 Watt, CE Mark Compliant Optional Hot Plug AC Redundant Power Supply
System Fans	12 hot plug fans ship standard, fully redundant
Required Cabling	For required cabling information, refer to the Web site at: http://h10010.www1.hp.com/wwpc/us/en/ss/WF05a/15351-241434-241475-241475-f79-3219233.html
OS Support	Microsoft Windows Server 2003 Novell NetWare LINUX (Red Hat, SuSE) SCO UnixWare, OpenServer VMware Virtualization Software Solaris 10 32/64-bit 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 . 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 DL385 G2, please see: http://h18023.www1.hp.com/support/files/server/us/index.html . 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 .

Standard Features

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 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: 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://h18000.www1.hp.com/products/servers/proliantdl385/index.html>.

Rack Kit

The HP ProLiant DL385 quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000*, 9000, 10000 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.

NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.

***NOTE:** High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL385 G2 in 7000 series racks. The DL385 G2 Cable Management Arm is not supported on 7000 series racks.

Telco Rack Support

DL385 G2 Telco Rack Kit:

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/>)

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>.

Standard Features

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

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 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*

Standard Features

NOTE: For a complete listing of service offerings and information visit:
<http://www.hp.com/services/proliantservices>
<http://www.hp.com/go/proliant/carepack>

HPC Interconnects

NOTE: High Performance Computing (HPC) interconnect technologies are available for the DL385 under the Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand, Gigabit Ethernet or Myrinet Interconnects:
<http://www.hp.com/techservers/clusters/ucp/index.html>

HPC Interconnect	InfiniBand	PCI-X and PCI-Express adapters
	Gigabit Ethernet	Use embedded ports
	Myrinet XP	PCI-X Rev D and Rev E adapters

Models

HP DL385 G2 Performance Models HP DL385G2 2218 2G HPM 432195-001	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Form Factor Availability	(2) Dual-Core AMD Opteron 2218 Processors (2.6 GHz, 95 Watts) 2MB (1 x 2MB) Level 2 cache - 2000 Series 4 GB (4 x 1 GB of 2:1 interleaved PC2-5300 DIMMs (DDR2-667) with Advanced ECC capabilities Embedded NC371i Multifunction Gigabit Server Adapters HP Smart Array P400/512MB BBWC Controller (RAID 0/1/5/6) None ship standard 1.168TB max - 8 x 146GB SAS drives (with optional hard drives) IDE DVD-ROM/CDRW combo Rack (2U), (3.5-inch) Hot Plug Fully Redundant Fans and Redundant Power Supplies
HP DL385 G2 Base Models HP DL385G2 2218 2G 407424-001 HP DL385G2 2216 2G 408838-001 HP DL385G2 2214 2G 407429-001	Processor(s) One of the following depending on Model Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Form Factor Availability	(1) Dual-Core AMD Opteron 2218 Processor (2.6 GHz, 95 Watts) (1) Dual-Core AMD Opteron 2216 HE Processor (2.4 GHz, 68 Watts) (1) Dual-Core AMD Opteron 2214 HE Processor (2.2 GHz, 68 Watts) 2MB (2 x 1MB) Level 2 cache - 2000 Series 2 GB (2 x 1 GB) PC2-5300 DIMMs (DDR2-667) with Advanced ECC capabilities Embedded NC371i Multifunction Gigabit Server Adapters HP Smart Array P400/256MB Controller (RAID 0/1/5) None ship standard 1.168TB max - 8 x 146GB SAS drives (with optional hard drives) Optional DVD, DVD/CD-RW combo, DVD±R/RW or floppy drive Rack (2U), (3.5-inch) Hot Plug Fully Redundant Fans Standard
HP DL385 G2 Entry Models HP DL385G2 2210 1G 434940-001	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Form Factor Availability	(1) Dual Core AMD Opteron 2210 HE Processor (1.8 GHz, 68 Watts) 2MB (2 x 1MB) Level 2 cache - 2000 Series 1 GB (2 x 512 MB) PC2-5300 DIMMs (DDR2-667) with Advanced ECC, capabilities Embedded NC371i Multifunction Gigabit Server Adapters HP Smart Array E200/64MB Controller (RAID 0/1) None ship standard 1.168TB max - 8 x 146GB SAS drives (with optional hard drives) Optional DVD, DVD/CD-RW combo, DVD±R/RW or floppy drive Rack (2U), (3.5-inch) Hot Plug Fully Redundant Fans Standard

Configuration Information - Factory Integrated Models

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 (choose one of the following configurable models)

Models	HP ProLiant DL385G2 Rack Chassis	414109-B21
	Factory Integrated Model ships with:	
	(8) SFF Serial Attached SCSI (SAS) Drive Bays	
	Embedded NC371i Multifunction Gigabit Server Adapters	
	PCI-Express Riser Cage	
	800 Watt hot plug power supply, CE Mark Compliant	
	One IEC Power cord	
	12 hot plug fans (fully redundant)	
	Rack (2U), (3.5-inch)	

Step 1A: Choose SAS Controller (must choose only one of the following)

SAS Controllers	P400/256 for DL380 G5/ DL385 G2 FIO	405160-B21
	NOTE: PCI Express	
	P400/512 BBWC for DL380 G5/ DL385 G2 FIO	405162-B21
	NOTE: PCI Express	
	HP Smart Array E200/64 Controller	409180-B21
	NOTE: PCI Express	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	NOTE: PCI Express	
	HP Smart Array P600/256 BBWC Controller	337972-B21
	NOTE: PCI-X. SA-P600 Controller supports both internal and external drives.	

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

Processors	HP OPTRN 2.6/1000-1M DC DL385R02 FIO processor	407433-L21
	HP OPTRN 2.2/1000-1M DC HE DL385R02 FIO processor	407435-L21
	HP OPTRN 2.0/1000-1M DC HE DL385R02 FIO processor	408837-L21
	HP OPTRN 2.4/1000-1M DC HE DL385R02 FIO processor	408840-L21
	HP OPTRN 2.4/1000-1M DC DL385R02 F10 processor	434945-L21
	HP OPTRN 1.8 GHz/1000-1M DC HE DL385R02 F10 processor	434943-L21
	HP OPTRN 1.8 GHz/1000-1M DC DL385R02 F10 Proc.	434947-L21
Base Memory	1 GB PC2-5300 DDR2 2 x 512 MB Kit	408850-B21
	2 GB PC2-5300 DDR2 2 x 1 GB Kit	408851-B21
	4 GB PC2-5300 DDR2 2 x 2 GB Kit	408853-B21
	8 GB REG PC2-5300 (2 x 4GB) dual rank	408854-B21

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Options for Factory Integration

Performance Packs	The HP ProLiant DL385 G2 performance packs are necessary to configure a HP ProLiant DL385 G2 Performance Model. HP ProLiant DL385 G2 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor and a redundant power supply. To complete the configuration of a Performance model, select the Slimline CD-RW/DVD-ROM Combo Option Kit (331903-B21).	
	HP DL385G2 2218 HPM FIO Perf Pack	432858-B21

Step 4: Choose Additional Options for Factory Integration

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

Options

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

HP ProLiant DL385 G2	HP 2 Slot PCI-Express x16 & x4 Riser DL385G2	410571-B21
Unique Options	HP PCI-X/PCI-E NHP RISER DL385G2	410570-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_na/12466_na.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 - Windows License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.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_na/12327_na.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_na/11925_na.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_na/12573_na.HTML		
ProLiant Essentials Rapid Deployment Pack		
Rapid Deployment Pack, Single-Server License		267196-B21
NOTE: This license allows 1 server to be deployed and managed via RDP.		
NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.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_na/11452_na.HTML		



Options

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.		
ProLiant Essentials Server Migration Pack - Physical to ProLiant Edition, Single-Migration License		412978-B21
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_na/12328_na.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_na/12111_na.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	ProLiant Essentials Integrated Lights-Out Advanced Pack	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server License	263825-B21
	Featuring: sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.	
	NOTE: For additional ProLiant Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML	
	ProLiant Essentials Integrated Lights-Out Select Pack	
	ProLiant Essentials Integrated Lights-Out Select Pack, 1 server License	413119-B21
	Featuring: sophisticated remote control and security features for HP BladeSystem servers and ProLiant ML/DL servers in text console environments.	
	NOTE: For additional ProLiant Integrated Light-Out Select Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_na/12362_na.HTML	

Options

ProLiant Software Maintenance Subscription	ProLiant Software Maintenance Subscription	355060-B21
	ProLiant Software Maintenance Single Release	356573-B21
	ProLiant Foundation Pack Single Release	356604-B21

NOTE: Please see the SmartStart QuickSpecs for additional information regarding the subscription purchase:
http://h18000.www1.hp.com/products/quickspecs/North_America/11073.html

Processors	HP OPTRN 2.6/1000-1M DC DL385R02	407433-B21
	HP OPTRN 2.2/1000-1M DC HE DL385R02	407435-B21
	HP OPTRN 2.0/1000-1M DC HE DL385R02	408837-B21
	HP OPTRN 2.4/1000-1M DC HE DL385R02	408840-B21
	HP OPTRN 2.4/1000-1M DC DL385R02	434945-B21
	HP OPTRN 1.8/1000-1M DC HE DL385R02	434943-B21
	HP OPTRN 1.8/1000-1M DC DL385R02	434947-B21

Memory	1 GB PC2-5300 DDR2 2 x 512 MB Kit	408850-B21
	2 GB PC2-5300 DDR2 2 x 1 GB Kit	408851-B21
	4 GB PC2-5300 DDR2 2 x 2 GB Kit	408853-B21
	8 GB REG PC2-5300 (2 x 4GB) dual rank	408854-B21

Optical Drives	Slimline CD-RW/DVD-ROM Combo Option Kit	331903-B21
	NOTE: Included in performance models.	
	Slimline DVD-ROM Drive (8x/24x) Option Kit	264007-B21
	HP DVD±R/RW 8X Slim	383975-B21

Hard Drives	SFF SAS - Universal 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 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_na/12244_na.HTML

SFF SATA Hot Plug

HP 60GB 1.5G SATA 5.4K SFF HDD	379306-B21
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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_na/12091_na.HTML

Storage Controllers	NOTE: Please refer to the HP ProLiant DL385 G2 SCSI Cabling Matrix for information on what's required to cable optional array controllers: ftp://ftp.compaq.com/pub/products/servers/proliantdl380/dl380g4-cabling-matrix.pdf
	SAS Controllers

Smart Array E200 Controller



Options

HP Smart Array E200/128 BBWC Controller	411508-B21
HP Smart Array E200/64MB Controller	409180-B21
128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	
Smart Array P400 Controller	
HP Smart Array P400/256MB Controller	405132-B21
HP Smart Array P400/512MB BBWC Controller	411064-B21
512MB Battery-backed cache upgrade	405148-B21
NOTE: For Smart Array P400 Controller.	
Battery-backed write cache upgrade	383280-B21
NOTE: For Smart Array P400 Controller.	
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 P400 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.	
Smart Array P600 Controller	
HP Smart Array P600/256 BBWC Controller	337972-B21
NOTE: Requires Mixed PCI-E/X riser cage.	
512 MB Battery-Backed Cache Upgrade	372538-B21
NOTE: This 512-MB Battery-Backed Cache Module upgrade kit supports the Smart Array P600 Controller and the Smart Array 6400 series Controller.	
Smart Array P800 Controller	
HP Smart Array P800/512 BBWC Controller	381513-B21
NOTE: Please see the following Controller QuickSpecs for Technical Specifications such as PCI Bus, PCI Peak Data Transfer Rate, SCSI Protocols supported, SCSI Peak Data Transfer Rate, Channels, SCSI Ports, Drives supported, Cache, RAID support, and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/12247_na/12247_na.HTML (Smart Array P600 Controller) http://h18000.www1.hp.com/products/quickspecs/12616_na/12616_na.HTML (Smart Array P800 Controller)	
SAS HBA	
HP 8 Internal Port SAS HBA with RAID	347786-B21
NOTE: Please see the following QuickSpecs for additional information: http://h18004.www1.hp.com/products/quickspecs/12332_na/12332_na.html (SAS HBA)	
SCSI Controllers for External Drive/Storage Support	
NOTE: All Ultra 320 controllers are PCI-X and require the Mixed Riser Cage Option Kit (PCI-E/PCI-X).	
Smart Array 6402/128 Controller	273915-B21
NOTE: Ultra320 SCSI.	
Smart Array 6404/256 Controller	273914-B21
NOTE: Ultra320 SCSI.	
Smart Array 642 Controller	291967-B21
NOTE: Ultra320 SCSI.	



Options

128-MB Battery-Backed Write Cache (BBWC)	351580-B21
NOTE: Supports the Smart Array E200 Controller, Smart Array 641 Controller, and Smart Array 642 Controller.	
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/11943_na/11943_na.HTML (Single Channel Ultra320 SCSI HBA) http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.HTML (Smart Array 6400 Series) http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML (Smart Array 642) http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML (SC11Xe HBA)	

Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-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 NC370T PCI-X Multifunction 1000T Gigabit Server Adapter	374191-B22
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
	HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
	NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	NOTE: Any NIC (except the NC1020) on the option list can be used for redundancy with the embedded Dual NC373i Multifunction Gigabit NICs. 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.	
	HP IB 4X SDR PCI-e single PORT HCA	431038-B21
	HP IB 4X DDR PCI-e Single PORT HCA	431039-B21

Redundant Options	Redundant Power Supply 350/370/380 G5 Kit	399771-B21
	Redundant Power Supply 350/370/380 G5 Kit	399771-001
	Redundant Power Supply 380 G5 Kit - 48Volt DC	433634-B21

Tape Drives	NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products/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	
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_na/11739_na.html http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html 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 SCSI 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
NOTE: The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 24 USB, DAT 40 USB and DAT 72 USB tape drives.	
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 and Ultrium 920 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	

Options

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_na/10854_na.HTML

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 Tape 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



Options

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>

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: 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 7.5 or later).

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_na/12337_na.html

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_na/11935_na.html

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_na/11932_na.html

NOTE: For configuration/certification options for the HP Parallel Database Cluster for Oracle RAC please go to: <http://www.hp.com/solutions/highavailability/oracle>

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_na/11518_na.html

NOTE: For configuration/certification options for HP Serviceguard for Linux please go to: <http://www.hp.com/info/sglx>



Options

StorageWorks Options	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
	HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA	AE369A
HP StorageWorks Modular Smart Array 50	HP StorageWorks Modular Smart Array 50 Enclosure	364430-B21
	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_na/12245_na.HTML	
HP StorageWorks Modular Smart Array 500 G2	HP StorageWorks Modular Smart Array 500 Generation 2	335880-B21
	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_na/11956_na.HTML	
Uninterruptible Power Systems - Rack	HP R1.5 VA 1U UPS	AF419A
	HP R/T2200 2-U ERM	AF412A
USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	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 Adapter Kit (for wide racks)	Rack Adapter Kit	332815-B21
	NOTE: Not required for most racks. This kit allows HP rack servers to fit in racks that are 24" wide.	
HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
	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_na/12074_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	

Options

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A

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_na/12402_na.HTML

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

HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP 10842 (42U) Rack Cabinet - Pallet	257415-B21
	HP 10842 (42U) Rack Cabinet - Shock Pallet	257415-B22
	HP 10647 (47U) Rack Cabinet - Pallet	245160-B21
	HP 10647 (47U) Rack Cabinet - Crated	245160-B23
	HP 10622 (22U) Rack Cabinet - Pallet	245163-B21
	HP 10622 (22U) Rack Cabinet - Shock Pallet	245163-B22
	HP 10622 (22U) Rack Cabinet - Crated	245163-B23

NOTE: xxxxxx-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). xxxxxx-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. Not all Compaq equipment is qualified to be shipped in the Rack 10000 series.

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:
http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML

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
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A

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, RM	371302-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	AF101A
	HP 48 Port Serial Console Server	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 .	

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	U4544E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4545E
	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	U4546E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4554E
	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	U4555E
	Installation and Startup for Essentials Rapid Deployment Pack, Electronic	U5683E
	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	U4556E

Options

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	U4557E
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	U6312E
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U8334E

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 DL385G2 Base Models

Standard Memory

2 GB PC2-5300 DDR2 DIMMs (667 MHz) installed (2 x 1 GB)

Upgrading Memory and Memory Interleaving

DIMMs must be installed in identical pairs. Bank interleaving is automatically enabled on a processor node under the following conditions:

- 1) Four single ranked DIMMs populated per node (4 x 512 MB or 4 x 1 GB for example) yields 2-way bank interleaving.
- 2) Two dual ranked DIMMs populated per node (2 x 2 GB or 2 x 4 GB for example) yields 2-way bank interleaving.
- 3) Four dual ranked DIMMs populated per node (4 x 2 GB for example) yields 4-way bank interleaving.

If single and dual ranked DIMMs are mixed on the same node, bank interleaving will not be enabled.

Node interleaving can be configured via RBSU if both processors have the same memory footprint and it is independent of bank interleaving.

DIMMs must be installed in decreasing capacity with the largest DIMMs installed in the banks furthest away from each processor.

Standard Memory Plus Optional Memory

Up to 26 GB memory is available with the standard memory of 1GB and the optional installation of PC2-5300 DDR2 DIMMs (667 MHz) memory kits. - 6 slots would be available, and potentially could be filled with 4GB DIMMs.

Standard Memory Replaced with Optional Memory

Up to 32 GB of memory is available with the removal of the standard 1GB of memory and the optional installation of PC2-5300 DDR2 2 GB DIMMs (667 MHz) memory kits.

NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	4 GB	1 GB	1 GB	Empty	Empty	Empty	Empty	Empty	Empty
Optional	26 GB	1 GB	1 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Following are memory options available from HP:

1 GB PC2-5300 DDR2 2 x 512 MB Kit	408850-B21
2 GB PC2-5300 DDR2 2 x 1 GB Kit	408851-B21
4 GB PC2-5300 DDR2 2 x 2 GB Kit	408853-B21
8 GB REG PC2-5300 (2 x 4GB) dual rank	408854-B21

Memory

HP ProLiant DL385G2 Performance Models

Standard Memory

4 GB PC2-5300 DDR2 DIMMs (667 MHz) (4 x 1GB)

Upgrading Memory and Memory Interleaving

DIMMs must be installed in identical pairs. Bank interleaving is automatically enabled on a processor node under the following conditions:

- 4) Four single ranked DIMMs populated per node (4x512 MB or 4x1 GB for example) yields 2-way bank interleaving.
 - 5) Two dual ranked DIMMs populated per node (2x2 GB or 2x4 GB for example) yields 2-way bank interleaving.
 - 6) Four dual ranked DIMMs populated per node (4x2 GB or 4x4 GB for example) yields 4-way bank interleaving.
- If single and dual ranked DIMMs are mixed on the same node, bank interleaving will not be enabled.

Node interleaving can be configured via RBSU if both processors have the same memory footprint and it is independent of bank interleaving.

DIMMs must be installed in decreasing capacity with the largest DIMMs installed in the banks furthest away from each processor.

Standard Memory Plus Optional Memory

Up to 20 GB memory is available with the standard memory of 4*1 GB and the optional installation PC2-5300 DDR2 DIMMs (667 MHz) memory kits. - 4 slots available (4*4 GB = 16GB + 4*1 GB standard = 20 GB).

Standard Memory Replaced with Optional Memory

Up to 16 GB of memory is available with the removal of the standard 1GB of memory and the optional installation of PC2-5300 DDR2 DIMMs (667 MHz) memory kits.

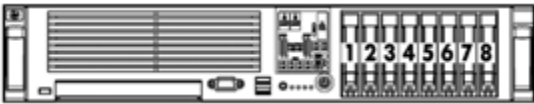
NOTE: Chart does not represent all possible configurations.

Memory		Slot							
		1	2	3	4	5	6	7	8
Standard	4 GB	1 GB	1 GB	Empty	Empty	1 GB	1 GB	Empty	Empty
Optional	20 GB	1 GB	1 GB	4 GB	4 GB	1 GB	1 GB	4 GB	4 GB
Maximum	32 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Following are memory options available from HP:

1 GB PC2-5300 DDR2 2 x 512 MB Kit	408850-B21
2 GB PC2-5300 DDR2 2 x 1 GB Kit	408851-B21
4 GB PC2-5300 DDR2 2 x 2 GB Kit	408853-B21
8 GB REG PC2-5300 (2 x 4GB) dual rank	408854-B21

Storage



1-8 Eight SFF SAS hot plug hard drive bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Slimline CD-RW/DVD-ROM Combo Option Kit	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional
Slimline DVD-ROM Drive (8x/24x) Option Kit	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional
HP DVD±R/RW 8X Slim	Only 1 available removable media bay	Slimline bay	Integrated IDE NOTE: Optional

Hard Drives

SAS - Hot Plug Drives

	Quantity Supported	Position Supported	Controller
146GB 3G SAS 10K SP	Up to 8	1-8	HP Smart Array E200/64MB Controller
72GB 3G SAS 10K SP			HP Smart Array E200/128 BBWC Controller
36GB 3G SAS 10K SP			HP Smart Array P400/256MB Controller
			HP Smart Array P400/512MB BBWC Controller
			HP Smart Array P600/256 BBWC Controller
			NOTE: Optional mixed PCI-X/E required for SA-P600.
			HP Smart Array P800/512 BBWC Controller

SATA - Hot Plug Drives

	Quantity Supported	Position Supported	Controller
60GB 1.5G SATA 5.4K	Up to 8	1-8	HP Smart Array E200/64MB Controller
			HP Smart Array E200/128 BBWC Controller
			HP Smart Array P400/256MB Controller
			HP Smart Array P400/512MB BBWC Controller
			HP Smart Array P600/256 BBWC Controller
			NOTE: Optional mixed PCI-X/E required for SA-P600.
			HP Smart Array P800/512 BBWC Controller

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 50 Enclosure	2 per connector (supports 1+1 cascading)	External	HP Smart Array P600/256 BBWC Controller NOTE: Optional mixed PCI-X/E cage required.
Modular Smart Array 500 G2	1 per SCSI	External	Please see the Modular Smart Array 500 or 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500 .
Modular Smart Array 1000:	http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML		
Modular Smart Array 1500 cs:	http://www.hp.com/go/MSA1500cs		

Maximum Storage Capacity - (with MSA50)

Internal	1.168TB (8 x 146GB SAS SFF)
External	2.920TB (20 x 146GB SAS SFF)
Total	4.088TB

Tape Drives, Tape Autoloaders, & Tape Libraries

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/North_America/10233.html

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/North_America/10809.html

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.

NOTE: For complete listing of tape drive offerings see
<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>
For recommended tape drive offerings for this ProLiant server see the following:

	Position Supported	Controller	Controller Part Number
HP StorageWorks Tape Drives, 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 VS160 SDLT 600	External	HP SC11Xe Host Bus Adapter	412911-B21



Storage

HP StorageWorks Tape Drives, SAS External Ultrium 448 SAS Ultrium 920 SAS	External	HP 8 Internal Port SAS HBA with RAID 0/1 NOTE: Requires purchase of PCI-X Riser Kit (410570-B21)	347786-B21
	External	HP Smart Array P800 Controller NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	381513-B21
HP StorageWorks Tape Autoloaders, External DAT 72x10 Autoloader 1/8 G2 Tape Autoloader	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-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 NOTE: Requires purchase of PCI-X Riser Kit (410570-B21)	347786-B21
	External	HP Smart Array P800 Controller NOTE: Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements.	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

Power Supply Specification - AC	Part number		380622-001			
	Spare Kit		403781-001			
Operational Input Voltage Range (Vrms)	90 to 264					
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)					
Nominal Input Voltage (Vrms)	100	120	208	220	230	240
Max Rated Output Wattage Rating	800	850	1000	1000	1000	1000
Nominal Input Current (A rms)	10.0	8.8	5.85	5.5	5.2	4.97
Max Rated Input Wattage Rating (Watts)	980	1035	1193	1186	1172	1169
Max. Rated VA (Volt-Amp)	1000	1056	1217	1210	1196	1193
Efficiency (%)	81.5	82	84	84	85	85.5
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.44	0.52	0.91	0.96	1.00	1.04
Max. Inrush Current (A peak)	30	30	30	30	30	30
Max. Inrush Current duration (mS)	3	3	3	3	3	3
Power Supply Specification - DC	Part number		412837-001			
	Spare Kit		419613-001			
Operational Input Voltage Range (Vrms)	-36.0 to -72.0V DC					
Frequency Range (Nominal) (Hz)	DC					
Nominal Input Voltage (Vrms)	36	48	72			
Max Rated Output Wattage Rating	1210	1210	1210			
Nominal Input Current (A rms)	38	29	20			
Max Rated Input Wattage Rating (Watts)	1368	1392	1440			
Efficiency (%)	87.6	87.6	86			
Max. Inrush Current (A peak)	60	60	60			
Max. Inrush Current duration (mS)	100	100	100			

NOTES:

- 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/calc/Power%20Calculator%20Catalog.xls>

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL385 G2
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Technical Specifications

System Unit	Dimensions (HxWxD) (with feet/bezel)	3.38 x 17.54 x 26.01 in (8.59 x 44.54 x 66.07 cm)	
	Weight (approximate)	Maximum	60 lb (27.22 kg)
		Minimum	47.18 lb (20.41 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100-132 VAC, 200-240 VAC
		Rated Input Current	10A (100VAC), 10A (120VAC), 6.1A (200VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1000/1056/1205 W
	BTU Rating	BTU/HR	3490/3680/4150
	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:	
		- Click on: "ProLiant Servers"	
		- Click on the Server of interest. Example: DL385 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	800/850/1000 W
		Maximum Peak Power	800/850/1000 W
	Temperature Range	Operating	50° to 95° F (10° to 35° C) at sea level with an altitude de-rating of 1.8° F per 1000 ft (1.0° C per 304.8 m) to 10,000 ft (3048 m) no direct sunlight allowed. Maximum rate of change is 18° F/Hr (10° C/Hr). Upper operating limit is 10,000 ft (3,048 m) or 70 Kpa/10.1 psia. System performance may be reduced if operating with a fan fault or above 30° C.
		Non-operating	-22° to 140° F (-30° to 60° C) Maximum rate of change is 36° F/Hr (20° C/Hr). Upper non-operating limit is 30,000 ft (9,144 m) or 30.3KPa/4.4 psia.
	Maximum Wet Bulb Temperature	101.7° F (38.7° C)	
	Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28° C maximum wet bulb temperature.
		Non-operating	5% to 95% relative humidity (Rh), 38.7° C maximum wet bulb temperature.
	Acoustic Noise	Idle Minimum (Fixed Disk Drives Spinning)	
		L WAd (BELS)	6.4
		L pAm (dBA)	47
		Operating Minimum (Random Seeks to Fixed Disks)	
		L WAd (BELS)	6.6
		L pAm (dBA)	49

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	3TB (6 x 500GB)
	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+0 (Striping & Mirroring) RAID 0 (Striping)

Smart Array E200 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	DDR1-266 MHz 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 64MB cache or a 128MB battery backed cache: ECC protection, battery-backed, and transportable
	Logical Volumes Supported	Up to 32 logical volumes
	Maximum Volume Capacity	3 TB (6 x 500 GB)
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 0 (Striping)

Technical Specifications

Embedded NC371i Multifuntion Gigabit Server Adapters	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	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)	2000Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)

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