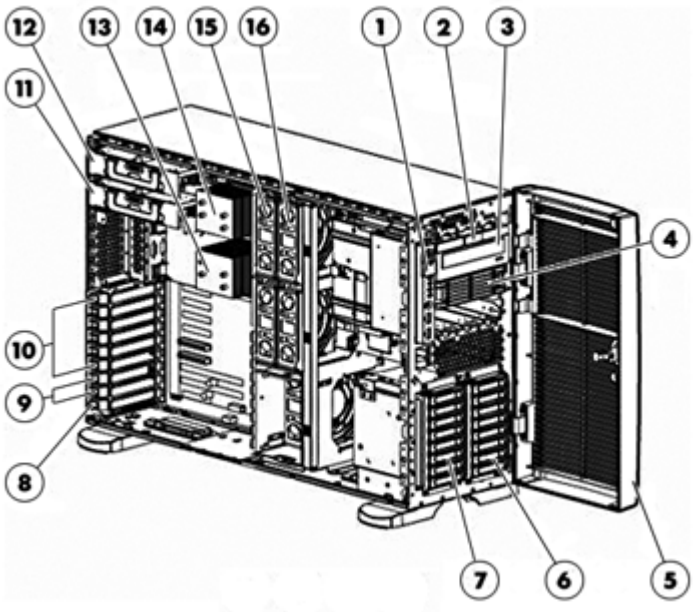
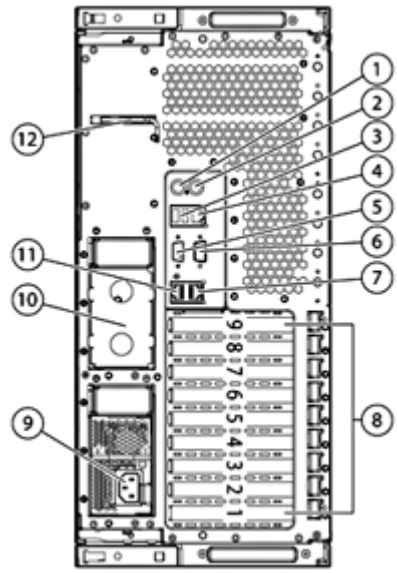
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview

HP ProLiant ML370 G5 Model (tower)





Front View:

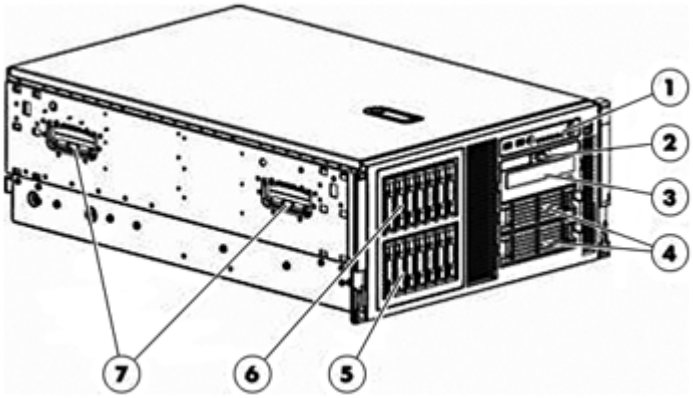
1. System Insight Display (SID)
2. Media Bay Spacer (Tower)/Video Connector (Rack)
3. DVD-ROM Drive
4. Removable Media Bays
5. Front Bezel (Tower Model Only)
6. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
7. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
8. Integrated RAID Controller Slot
9. (2) PCI-X 64 Bit/133MHz Slot
10. (6) PCI-Express x4 Slot
11. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Standard
12. (8) PC2-5300 Fully Buffered DIMM Slots per memory card - Optional
13. Dual-Core Intel Xeon processor - Optional
14. Dual-Core Intel Xeon processor - Standard (2 processors standard on all Performance Models)
15. (3) Hot Plug Redundant Fans - Standard
16. (3) Hot Plug Redundant Fans - Optional

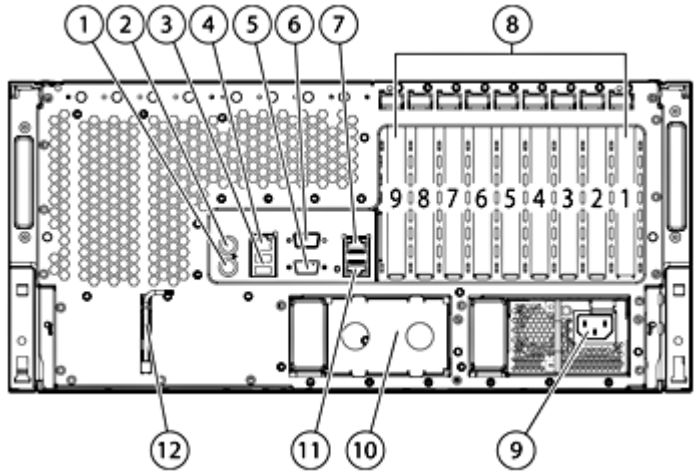
Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

Overview

HP ProLiant ML370 G5 Model (Rack)





Front View:

1. System Insight Display (SID)
2. Video Connector
3. DVD/CD-ROM Drive
4. Removable Media Bays
5. Hard Drive Bays 1-8 (Serial-attached SCSI (SAS) drives supported - SFF)
6. Hard Drive Bays 9-16 - Optional Drive Cage (Serial-attached SCSI (SAS) drives supported - SFF)
7. Rack Handles

Rear View:

1. Keyboard connector
2. Mouse connector
3. USB connectors
4. Integrated Lights-Out 2 (iLO 2) management connector
5. Video connector
6. Serial connector
7. NIC 2 connector
8. PCI expansion slots
9. Hot-plug power supply (primary bay)
10. Hot-plug power supply blank (redundant bay)
11. NIC 1 connector
12. T-15 Torx screwdriver

What's New

- Support for:
  - HP 500GB 6G SAS 7.2K SFF DP MDL HDD
  - HP 500GB 3G SATA 7.2K 2.5in MDL HDD
  - HP 160GB 3G SATA 7.2K 2.5in MDL HDD

At A Glance

The flagship ML370 G5 provides industry-leading management, performance and availability in a dual processor expansion server engineered to excel in a variety of environments - from corporate work groups in growing businesses to critical remote sites requiring continuous accessibility and uptime.

- Processors:
  - Quad-core Intel® Xeon® 5400 sequence processors with 12MB Level 2 cache (6MB per die) for blazing performance
  - Servers support up to 2 processors (2 processors standard on all Performance models)

Overview

- Preconfigured Performance models save valuable deployment time at a discounted bundle price
- Intel® 5000P chipset

- Memory:
  - Maximum 64 GB of PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 667MHz of 4:1 interleaved memory with Advanced ECC capabilities including Online Spare and Mirrored Memory (8 FB DIMMs per memory card; up to 2 supported)
    NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.
- Storage Controller:
  - Base Models: HP Smart Array P400/256MB Controller
  - Performance Models: HP Smart Array P400/512MB BBWC Controller
  - Entry Models: HP Smart Array E200/64MB Controller
- Internal Drive Support:
  - Up to (16) hot-plug Serial-attached SCSI (SAS) drives supported
  - (8) drive bays in standard configurations
  - Optional 8-bay drive cage available for maximum storage support (2nd drive bay cage will require additional SAS controller)
  - Two open half-height media bays; supports full height or half height internal tape drive
- Network Controller:
  - Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- Expansion Slots:
  - Nine total expansion slots
  - Eight available: (6) PCI-Express x4 and (2) PCI-X 64-Bit/133MHz
- USB Ports:
  - USB 2.0 support
  - Six total ports: (2) ports up front; (2) ports in back; (2) ports internal (one standard connection and one USB tape connection)
- Redundancy:
  - Optional Hot plug redundant power supplies and cooling fans
  - Hot plug redundant fans and power supplies included on all Performance models
- Infrastructure Management:
  - Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - HP Insight Control a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.
  - HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- Form Factor:
  - 5U tower and rack models available (front VGA connection on rack models)
- Operating Systems and Virtualization Software Support for ProLiant Servers:
  - Supports Windows, RHEL, SLES, OEL, Solaris, VMware, and Citrix
- Deployment/Serviceability:
  - System Insight Display on the front bezel for quick and easy server diagnostics
  - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers
  - Tool-less access to all system components for easy in-rack serviceability

Overview

- Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement

- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
    http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA0-6361ENW.pdf.
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	Quad-Core Processors Quad-Core Intel® Xeon® Processor X5470 (3.33 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB) NOTE: Available via Configure-to-order only. See Factory Integrated Models section for more details. Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor X5365 (3.00 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB) Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB) Quad-Core Intel® Xeon® Processor E5310 (1.60 GHz, 80 Watts, 1066 FSB) Dual-Core Processors Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor L5240 (3.00 GHz, 40 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor X5160 (3.0 GHz, 80 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor X5150 (2.67 GHz, 65 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor X5140 (2.33 GHz, 65 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor X5130 (2.0 GHz, 65 Watts, 1333 FSB) Dual-Core Intel® Xeon® Processor X5120 (1.86 GHz, 65 Watts, 1066 FSB) Dual-Core Intel® Xeon® Processor X5110 (1.6 GHz, 65 Watts, 1066 FSB) NOTE: Up to 2 processors supported. Performance configurations include two processors. NOTE: Please contact your regional sales support to determine Quad-Core upgradeability. Some of the earlier shipping models may not support upgrades to 5400/5400 Quad-Core processors. 5100 Dual-Core models are not upgradeable to the 5200 Dual-Core processors.
Cache Memory One of the following depending on Model	4 MB (2 x 2 MB) Level 2 cache (5000 series) 4 MB (1 x 4 MB) Level 2 cache (5100 series) 6 MB (1x 6 MB) Level 2 cache (5200 series) 8 MB (2 x 4 MB) Level 2 cache (5300 series) 12 MB (2 x 6 MB) Level 2 cache (5400 series)

Standard Features

Chipset

Intel® 5000P Chipset
NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.

Memory Protection

Advanced ECC, Online Spare and Mirroring
NOTE: Mirroring requires optional 2nd memory card.

Memory
One of the following depending on Model

Type	PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz with 4:1 interleaving NOTE: 4-way interleaving requires optional 2nd memory card.
Standard (Entry Models)	1 GB (2 x 512 MB)
Standard (Base Models)	2 GB (2 x 1 GB)
Standard (Performance Models)	4 GB (4 x 1 GB)
Maximum	64 GB (16 x 4 GB with 2 memory cards)

NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

Network Controller

Two embedded NC373i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

Expansion Slots

Expansion Slot #	Technology	Width	Connector Width*	Bus Number**	Form Factor	Notes
1	PCIe	x4	x8	6	Full length, full height slot	Reserved for integrated RAID controller
2	PCI-X (133MHz, 3.3 Volt)	64-bit	Not applicable	18	Full length, full height slot	Shared bus with slot 3
3	PCI-X (133MHz, 3.3 Volt)	64-bit	Not applicable	18	Full length, full height slot	Shared bus with slot 2
4	PCIe	x4	x8	14	Full length, full height slot	
5	PCIe	x4	x8	11	Full length, full height slot	Optional x8 if PCIE expander is installed in slot 4

Standard Features

	6	PCIe	x4	x8	31	Full length, full height slot	
	7	PCIe	x4	x8	28	Full length, full height slot	Optional x8 if PCIE expander is installed in slot 6
	8	PCIe	x4	x8	25	Full length, full height slot	
	9	PCIe	x4	x8	22	Full length, full height slot	Optional x8 if PCIE expander is installed in slot 8

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).

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

Storage	Diskette Drive	None standard
	Optical Drive One of the following depending on Model	DVD-ROM Drive (Performance Models) 48x IDE CD-ROM Drive (Base and Entry Models) NOTE: All units after 11/12/2007 will come standard with a DVD-ROM Drive.
	Hard Drives	None standard

Maximum Internal Storage	Hot Plug SAS	4.0TB	8 x 500GB with standard 8-bay hot plug Serial-attached SCSI (SAS) drive cage
		8.0TB	16 x 500GB with optional 2nd SAS drive cage
	Hot Plug SATA	8.0TB	16 x 500GB

Standard Features

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)

Interfaces

Serial	1 (2nd serial and parallel port available via option Kit)
Pointing Device (Mouse)	1
VGA	1 (+1 front VGA on rack models)
Keyboard	1
Network RJ-45	2
iLO 2 remote management port	1
USB 2.0 Ports	5 (2 on the rear, 2 on the front, 1 internal) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
Dedicated USB 2.0 Port	1 (available for DAT USB tape connectivity) NOTE: Internal USB ports are optimal for the attachment of HP DAT USB Internal Tape Drives

Graphics

Integrated ATI ES1000, 32 MB video standard

- 16 bit color: maximum resolution of 1600 x 1200
- 32 bit color: maximum resolution of 1280 x 1024

NOTE: Maximum resolution available via iLO 2 remote console is 1280 x 1024.

Form Factor

Tower and Rack (5U) models available

HP Insight management software

HP Insight Foundation

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

HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server

	lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation. The foundation pack includes: • HP SmartStart • HP Management • HP ProLiant Firmware Maintenance SmartStart version supported (minimum): SmartStart 7.51 http://www.hp.com/servers/smartstart
ProLiant Onboard Administrator	HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and the Insight Dynamics for ProLiant helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. See www.hp.com/go/ProLiantOA
HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access

	software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location. NOTE: For more information, visit: http://www.hp.com/go/insightdynamics
Industry Standard Compliance	ACPI 1.0b Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications PXE 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
Server Power Cords	110V NEMA -6ft. (1.83m) cord included in the United States; localized cables included with geographic specific models in other world regions. IEC 6 ft. (1.83m) cords also included with rack models. Localized cables included with geographic specific models in other world regions. NOTE: HP ProLiant ML370 a C13 to C14 2.8M jumper cord ships standard. If customers require a local power cord, they can check the power cord matrix for the appropriate country specific sku. Please see the following power cord matrix: http://www.hp.com/go/powercordmatrix.
Power Supply	800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line) Optional second Power Supply provides redundant capability NOTE: Please see the "Power Specifications" section later in this document for low line and high line requirements.
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords
System Fans	Three hot-plug fans standard. Redundant fan kit includes three additional fans.
Required Cabling	For external storage cabling information, refer to the Web site at: www.hp.com/servers/ml370.

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Microsoft Windows Server Hyper V Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Enterprise Linux (OEL) Solaris VMware Citrix for XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/ML370G5
Rack Airflow Requirements	Rack 10000 G2 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: • Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). • Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: 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: www.hp.com/servers/ml370-g5.
Rack Kit	Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.
Telco Rack Support	Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions at: 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 MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

HP Enterprise Configurator

The HP 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

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

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

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

Recommended Service - simplify ProLiant solution implementation, maintenance, and management.

- Support: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service: Installation and Start up only

Enhanced Service - optimize service level to increase IT performance and availability.

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

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

Models

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

HP ML370 G5 Performance Models Tower Models: Quad-Core: ML370T05 X5450 458341-xx1 Rack Models: Quad-Core: ML370R05 X5450 458342-xx1	Processor(s) Two of the following depending on Model	(2) Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6 MB) Level 2 cache - 5400 Sequence
	Memory	4 GB (4 x 1 GB); 2 memory cards (2 x 1 GB each card)
	Network Controller	Two embedded NC373i Multifunction Gigabit Sever Adapters
	Storage Controller	HP Smart Array P400/512MB BBWC Controller (RAID 0/1/1+0/5/6)
	Hard Drive	None ship standard
	Internal Storage	SAS: 8.0TB maximum with 16 SFF drive option SATA: 8.0TB maximum
	Optical Drive	DVD-ROM Drive (diskette drive optional)
	Power Supply	(1) 800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line)
	Fans	(3) hot-plug fans standard
	Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

HP ML370 G5 Base Models Tower Models: Quad-Core: ML370T05 E5440 458343-xx1 ML370T05 E5430 458345-xx1 Dual-Core: ML370T05 X5260 458425-xx1 Rack Models: Quad-Core: ML370R05 E5440 458344-xx1 ML370R05 E5430 458346-xx1 Dual-Core: ML370R05 X5260 458426-xx1	Processor(s) One of the following depending on Model	(1) Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB) (1) Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB) (1) Dual-Core Intel® Xeon® Processor X5260 (3.33 GHz, 80 Watts, 1333 FSB)
	Cache Memory One of the following depending on Model	12MB (2 x 6MB) Level 2 cache - 5400 Sequence 6MB (1 x6MB) Level 2 cache - 5200 Sequence
	Memory	2 GB (2 x 1 GB); 1 memory card
	Network Controller	Two embedded NC373i Multifunction Gigabit Sever Adapters
	Storage Controller	HP Smart Array P400/256MB Controller (RAID 0/1/1+0/5)
	Hard Drive	None ship standard
	Internal Storage	SAS: 8.0TB maximum with 16 SFF drive option SATA: 8.0TB maximum
	Optical Drive DVD-ROM standard after 11/12/07	48x CD-ROM Drive (diskette optional)
	Power Supply	(1) 800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line)
	Fans	(3) hot-plug fans standard
	Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

Models

HP ML370 G5 Entry Models Tower Models: Quad-Core: ML370T05 E5410 458347-xx1 Dual-Core: Rack Models: Quad-Core: ML370R05 E5410 458348-xx1	Processor(s) One of the following depending on Model	(1) Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)
	Cache Memory	12MB (2 x 6MB) Level 2 cache - 5400 Sequence
	Memory	1 GB (2 x 512 MB) Level 2 cache
	Network Controller	Two embedded NC373i Multifunction Gigabit Sever Adapters
	Storage Controller	HP Smart Array E200/64MB Controller (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	SAS: 8.0TB maximum with 16 SFF drive option SATA: 8.0TB maximum
	Optical Drive DVD-ROM standard after 11/12/07	48x CD-ROM (diskette optional)
	Power Supply	(1) 800 Watt-CE Mark Compliant Hot Plug Power Supply (1000 Watt high line)
	Fans	(3) hot-plug fans standard
	Form Factor One of the following depending on Model	Tower Rack (5U), (8.75-inch)

Country Code Key	Tower Code Key	Rack Code Key
XX=00	U.S. English	U.S. English
XX=01	Australia	N/A
XX=03	UK	N/A
XX=04	Germany	N/A
XX=05	France	N/A
XX=20	Brazil	Brazil
XX=29	Japan	Japan
XX=37	APD	APD
XX=42	Europe	Europe
XX=AA	PRC	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
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: 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 ML370 G5 Rack SAS CTO Chassis** (North America) Factory Integrated Model ships with: Two embedded NC373i Multifunction Gigabit Sever Adapters Eight Hot Plug SAS Drive Bays 9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz Integrated Lights-Out 2 (iLO2) 800 Watt-CE Mark Compliant Hot Plug Power Supply Three fans Rack (5U)	400606-B21
	HP ML370 G5 Tower SAS CTO Chassis (North America) Factory Integrated Model ships with: Two embedded NC373i Multifunction Gigabit Sever Adapters Eight Hot Plug SAS Drive Bays 9 expansion slots - 7 PCI-Express x4 and 2 PCI-X 64-bit 133 MHz Integrated Lights-Out 2 (iLO2) 800 Watt-CE Mark Compliant Hot Plug Power Supply Three fans Keyboard 2-button Mouse Tower (5U)	400607-B21

Step 1A: Choose Storage Controller (only one of the following)

Storage Controller	Smart Array P400/256 MB Controller NOTE: PCI Express.	405132-B21
	HP Smart Array P400/512 MB BBWC Controller NOTE: PCI Express.	411064-B21
	HP Smart Array E200/128 BBWC Controller NOTE: PCI Express.	411508-B21
	HP Smart Array P600/256 BBWC Controller NOTE: PCI-X SA-P600 has internal and external connectors.	337972-B21
	HP Smart Array 6404/512 FIO Controller	452240-B21

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

Processors	NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.	
	Quad-Core Processors	
	Quad-Core Intel® X5470 (3.33 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	488039-L21
	Quad-Core Intel® X5460 (3.16 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	458408-L21
	Quad-Core Intel® X5450 (3.00 GHz, 120 Watts, 1333 FSB) ML370 G5 FIO Kit	462711-L21
	Quad-Core Intel® E5450 (3.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458410-L21
	Quad-Core Intel® E5440 (2.83 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458412-L21
	Quad-Core Intel® E5430 (2.66 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458414-L21
	Quad-Core Intel® E5420 (2.50 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458416-L21
	Quad-Core Intel® E5410 (2.33 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458418-L21
	Quad-Core Intel® E5405 (2.00 GHz, 80 Watts, 1333 FSB) ML370 G5 FIO Kit	458420-L21
	Dual-Core Processors	
	Dual-Core Intel® X5260 (3.33 GHz, 80 Watts, 1333 FSB) ML370G5 FIO Kit	458422-L21
Base Memory	1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
	8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
	ML370 G5 Memory Board Kit NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.	403766-B21
	NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/.	

Step 3: Choose Additional Factory Integratable Options

Optical Drives	DVD-ROM Drive Option Kit	217053-B21

Performance Packs	The HP ProLiant ML370 G5 Performance Packs are necessary to configure a HP ProLiant ML370 G5 High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, redundant fan, power supply, and memory expansion board. NOTE: Must also select 217503-B21 to achieve parity to ML370 G5 High Performance Models.	
	HP ML370G5 X5450 HPM FIO Perf Pack	460928-B21
	HP ML370G5 E5345 HPM FIO Perf Pack	436374-B21

Step 4: Choose Additional Options for Factory Integration

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

Core Options

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

Unique Options	ML370 G5 SAS SFF 8-bay Drive Cage Kit NOTE: 2nd drive cage requires a storage controller.	401415-B21
	ML370 G5 Memory Board Kit NOTE: 2 Memory Boards required for support of 4:1 interleaving; 2 included with Performance models.	403766-B21
	Tower to Rack Conversion ML370 G5 Kit	400899-B21
	X4/X8 PCIE Bus Expander	403724-B21
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21
Processor	**Quad-Core Processors**	
	Quad-Core Intel® Xeon® Processor X5470 (3.33 GHz, 120 Watts, 1333 FSB)	488039-B21
	Quad-Core Intel® Xeon® Processor X5460 (3.16 GHz, 120 Watts, 1333 FSB)	458408-B21
	Quad-Core Intel® Xeon® Processor X5450 (3.00 GHz, 120 Watts, 1333 FSB)	462711-B21
	Quad-Core Intel® Xeon® Processor E5450 (3.00 GHz, 80 Watts, 1333 FSB)	458410-B21
	Quad-Core Intel® Xeon® Processor E5440 (2.83 GHz, 80 Watts, 1333 FSB)	458412-B21
	Quad-Core Intel® Xeon® Processor E5430 (2.66 GHz, 80 Watts, 1333 FSB)	458414-B21
	Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB)	458416-B21
	Quad-Core Intel® Xeon® Processor E5410 (2.33 GHz, 80 Watts, 1333 FSB)	458418-B21
	Quad-Core Intel® Xeon® Processor E5405 (2.00 GHz, 80 Watts, 1333 FSB)	458420-B21
	Quad-Core Intel® Xeon® Processor X5365 (3.00 GHz, 120 Watts, 1333 FSB)	450321-B21
	Quad-Core Intel® Xeon® Processor X5355 (2.66 GHz, 120 Watts, 1333 FSB)	433104-B21
	Quad-Core Intel® Xeon® Processor E5345 (2.33 GHz, 80 Watts, 1333 FSB)	433102-B21
	Quad-Core Intel® Xeon® Processor E5335 (2.00 GHz, 80 Watts, 1333 FSB)	437391-B21
	Quad-Core Intel® Xeon® Processor E5320 (1.86 GHz, 80 Watts, 1066 FSB)	433098-B21
	Dual-Core Processors	
	Dual-Core Intel® Xeon® Processor X5260 (3.0 GHz, 80 Watts, 1333 FSB)	458422-B21
	Dual-Core Intel® Xeon® Processor L5240 (3.0 GHz, 40 Watts, 1333 FSB)	461765-B21

Core Options

Memory	1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
	2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
	2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
	4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
	4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
	8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
	8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
	ML370 G5 Memory Board Kit NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models. NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/.	403766-B21
Internal Storage	ML370 G5 SAS SFF 8-bay Drive Cage Kit NOTE: Optional 2nd drive cage requires a dedicated storage controller.	401415-B21
Diskette Drive	Floppy Drive ML350/370 G5 Kit	409582-B21
Serial Port Kit	Parallel/Serial Port ML370/350 G5 Kit	401222-B21
Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	SAS Hot Plug SFF Enterprise (ENT) Drives	
	HP 300GB 6G SAS 10K SFF DP ENT HDD	507127-B21
	HP 300GB 3G SAS 10K SFF DP ENT HDD	492620-B21
	HP 146GB 6G SAS 15K SFF DP ENT HDD	512547-B21
	HP 146GB 3G SAS 15K SFF DP ENT HDD	504062-B21
	HP 146GB 6G SAS 10K SFF DP ENT HDD	507125-B21
	HP 146GB 3G SAS 10K SFF DP ENT HDD	418367-B21
	HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21
	HP 72GB 3G SAS 15K SFF DP ENT HDD	418371-B21
	HP 72GB 3G SAS 10K SFF DP ENT HDD	384842-B21
	SAS Hot Plug SFF Midline (MDL) Drives	
	HP 500GB 6G SAS 7.2K SFF DP MDL HDD	507610-B21
	NOTE: SAS Enterprise drives have a 3 year warranty, while SAS Midline drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	

	SATA Hot Plug SFF Midline (MDL) Drives	
	HP 500GB 3G SATA 7.2K 2.5in MDL HDD	507750-B21
	HP 160GB 3G SATA 7.2K 2.5in MDL HDD	530888-B21
	SATA Hot Plug SFF Entry (ETY) Drives	
	HP 250GB 3G SATA 5.4K SFF ETY HDD	460355-B21
	HP 120GB 1.5G SATA 5.4K SFF ETY HDD	458924-B21
	NOTE: SATA hard drives have a 1-year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
	SATA Hot Plug Midline (MDL) Solid State Drives	
	HP 60GB 3G SATA 2.5in MDL 1y Wty SSD	572071-B21
	HP 120GB 3G SATA 2.5in MDL 1y Wty SSD	572073-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html (Worldwide)	
Communications	Gigabit Ethernet Adapters	
	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapters allowed in this server.	
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
	NOTE: Supported on a Full Length-Full Height slot only.	
	10 Gigabit Ethernet Adapters	
	HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
	NOTE: A minimum of two gigabyte (2 GB) of server memory is required per each NC522SFP adapter.	
	NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	

Core Options

Power Supplies	Redundant Power Supply 350/370/380 G5 AU Kit	399771-011
	Redundant Power Supply 350/370/380 G5 EU Kit	399771-021
	Redundant Power Supply 350/370/380 G5 JP Kit	399771-291
	Redundant Power Supply 350/370/380 G5 Kit (IEC Cord)	399771-B21
	Redundant Power Supply 350/370/380 G5 UK Kit	399771-031
	Redundant Power Supply 350/370/380 G5 Kit (NEMA Cord)	399771-001
	Power Options	
	Hot Plug Redundant Fan ML370 G5 Kit	400693-B21

HP Insight Software	**HP Insight Control server deployment**	
	HP Insight Control server deployment, Electronic License including 1 year of 24x7 Technical Support and Updates	T9082AAE
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control for Linux	
	HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic	T9084BAE
	HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	464423-B22
	HP Insight Control for Linux, Media pack (DVD) - No licenses included NOTE: Media pack DVD contains HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.	464422-B22
	NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	
	HP Integrated Lights-Out Advanced	
	HP Integrated Lights-Out Advanced, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	512485-B21
	HP Insight Rapid Deployment software	
	HP Insight Rapid Deployment software No Media 1-Server License, including 1 year of 24x7 Technical Support and Updates NOTE: This license allows 1 server to be deployed and managed via RDP. Customer	452151-B21

will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service
NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html

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Storage Controllers	SAS Controllers	
	Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller	411508-B21
	Smart Array E500 Controller	
	HP Smart Array E500/256MB Controller	435129-B21
	Smart Array P400 Controller	
	HP Smart Array P400/256MB Controller NOTE: Supports RAID 0/1/5.	405132-B21
	HP Smart Array P400/512MB BBWC Controller NOTE: Supports RAID 0/1/1+0/5/6.	411064-B21
	Smart Array P600 Controller	
	HP Smart Array P600/256 BBWC Controller NOTE: Supports external drive attach.	337972-B21
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller NOTE: Supports external drive attach.	381513-B21
	Optional Upgrades	
	128 MB BBWC (Battery-Backed Write Cache) Enabler NOTE: Supports the Smart Array E200 Controller and Smart Array 642 Controller.	351580-B21
	512MB Battery-backed cache upgrade NOTE: Supports the Smart Array P400 Controller.	405148-B21
	Battery-backed write cache upgrade NOTE: Supports the Smart Array P400 Controller.	383280-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html (Smart Array E200 Controller) http://h18000.www1.hp.com/products/quickspecs/12700_div/12700_div.html (Smart Array E500 Controller) http://h18000.www1.hp.com/products/quickspecs/12400_div/12400_div.html (Smart Array P400 Controller) http://h18000.www1.hp.com/products/quickspecs/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 SC08Ge Host Bus Adapter	488765-B21

HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS.	416096-B21
HP 8 Internal Port SAS HBA with RAID NOTE: When using the 8 Internal Port SAS HBA with SATA Hard Drives, 1.5G SATA Hard Drives are required.	347786-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA) http://h18004.www1.hp.com/products/quickspecs/12332_div/12332_div.html (8 Internal Port SAS HBA)	
SCSI Controllers for External Drive/Storage Support	
Smart Array 6402/128 Controller NOTE: Ultra320 SCSI.	273915-B21
Smart Array 6404/256 Controller NOTE: Ultra320 SCSI.	273914-B21
Smart Array 642 Controller NOTE: Ultra320 SCSI.	291967-B21
128-MB BBWC (Battery-Backed Write Cache) Enabler NOTE: Supports the Smart Array E200 Controller and Smart Array 642 Controller.	351580-B21
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
SCSI HBA	
HP SC11Xe Host Bus Adapter NOTE: Recommended HBA for SCSI tape drive connect.	412911-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11943_div/11943_div.html (Single Channel Ultra320 SCSI HBA) 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/10429_div/10429_div.html (SCSI Adapter) http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA) http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html (SC08Ge HBA)	

Additional Options

Tape Storage	NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	Tape Drives	
	DAT 320 WW SAS External Tape Drive	AJ828A
	DAT 320 USB External Tape Drive	AJ823A
	HP DAT 320 USB Internal Tape Drive	AJ825A
	SAS Tape Drives	
	NOTE: For the ML370 G5, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape.	
	HP DAT 320 SAS Internal Tape Drive	AJ830A
	HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape	DW085A
	HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive	EH847A
	HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive	EH919A
	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.	
	HP StorageWorks 1/8 G2 Tape Autoloader	
	HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader	AK377A
	HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader	AH558A
	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.	
	HP StorageWorks MSL2024 Tape Library	
	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library	AK378A
	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library	AH559A
	HP StorageWorks MSL4048 Tape Library	
	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library	AK380A
	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library	AH560A
	NOTE: Please reference the MSL 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.	

Additional Options

Disk-Based Backup	RDX Removable Disk Backup	
	HP StorageWorks RDX500 Internal Removable Disk Backup System	AJ934A
	NOTE: 500GB of Disk Storage.	
	NOTE: Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html	
	D2D Backup	
	HP StorageWorks D2D2502i Backup System	EJ001A
	NOTE: 2 TB raw capacity/1.5 TB useable capacity.	
	HP StorageWorks D2D2504i Backup System	EJ002A
	NOTE: 4 TB raw capacity/3 TB useable capacity.	
	NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://www.hp.com/go/d2d.	
StorageWorks Options	HP StorageWorks Fibre Channel HBAs	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP StorageWorks 81B PCI-e FC HBA Single Port	AP769A
	HP StorageWorks 82B PCI-e FC HBA Dual Port	AP770A
	HP StorageWorks 41B 4Gb PCI-e FC HBA	AP767A
	HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA	AP768A
	Emulex Fibre Channel HBAs	
	HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
	HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
	HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A
	QLogic Fibre Channel HBAs	
	HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
	HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
	HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A
	StorageWorks SCSI HBA	
	HP U320e SCSI Host Bus Adapter	AH627A
	NOTE: Recommended HBA for MSL SCSI Tape Library connect.	

Additional Options

HP StorageWorks Modular Smart Array

MSA SAN Storage Arrays

HP StorageWorks 50 Modular Smart Array	364430-B21

NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)

HP StorageWorks 60 Modular Smart Array	418408-B21

NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html (Worldwide)

HP StorageWorks 70 Modular Smart Array Enclosure	418800-B21

NOTE: Please see the Modular Smart Array 70 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)

Uninterruptible Power Systems

HP Tower UPS

HP T1000v Uninterruptible Power System

HP T1000v UPS	AF443A

NOTE: The T1000v is available in China and India only.

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13130_div/13130_div.html (Worldwide)

HP T1500 G3 UPS Models

HP T1500 G3 UPS, NA	AF450A
HP T1500 G3 UPS, INTL	AF451A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html (Worldwide)

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

HP Rack-mountable UPS

HP R1500 G2 UPS

HP, R1.5kVA UPS, 1U, NA	AF419A
HP, R1.5kVA UPS, 1U, INTL	AF418A
HP, R1.5kVA UPS, 1U, JPN/TW	AF421A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)

HP R3000 UPS

HP R3000 VA UPS, 2U, DTC, INTL	AF414A
HP R3000 VA UPS, 2U, Low voltage L5-30, NA	AF422A

HP R3000 VA UPS, 2U, High voltage L6-20, NA	AF423A
HP R3000 VA UPS, 2U, High voltage L6-20, JPN	AF424A
HP R3000 VA UPS, 2U, Low voltage L5-30, JPN	AF425A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html (Worldwide)

HP R3000v Uninterruptible Power System

HP R3000v UPS	AF444A

NOTE: The R3000v is available in China and India only.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html (Worldwide)

HP R/T3000 Uninterruptible Power System (UPS)

HP R/T3000 UPS, Low voltage NA/JPN	AF452A
HP R/T3000 UPS, High voltage, NA/JPN	AF453A
HP R/T3000 UPS, High voltage, detachable inlet cord INTL	AF454A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html (Worldwide)

HP Rack-Mountable R5500 UPS

HP R5500 VA UPS, INTL	AF416A
HP R5500 VA UPS, NA/JPN	AF426A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)

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

Additional Options

Power Distribution Units	Monitored PDUs	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø, 24A (NA/JPN)	AF503A
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A (NA/JPN)	AF505A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 22.1 kVA S2316 Monitored PDU- dual input, 3Ø, 16A (INTL)	AF507A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 14.7 kVA S2132 Monitored PDU- dual input, 1Ø, 32A (INTL)	AF509A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
	HP Monitored Power Distribution Unit: Half Rack Version	
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular PDUs 1U/0U (up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).	
	Fixed Cord Extension Bars	351655-B21
	NOTE: Two extension bar sticks; each with (7) C13 plugs.	
	3.6kVA Model - mPDU, 16A, High (WW)	252663-B24
	2.8 kVA Model - mPDU, 24A, Low (NA/JPN)	252663-D71
	4.9kVA Model - mPDU, 24A, High (NA/JPN)	252663-D72
	7.3kVA Model - mPDU, 32A, High (INTL)	252663-B31
	8.3kVA Model - mPDU, 40A, High (WW)	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
	9.2kVA Model - mPDU, 40A, High (power cord attached) (INTL)	252663-B32
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu (Worldwide)	

Additional Options

HP Rack Series	**HP Rack 5000 Series** (Graphite Metallic)	
	HP 5642 Rack-Unassembled	358254-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.html (Worldwide)	
	HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	
	S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	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
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	NOTE: Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.	
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
	NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).	
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	

HP Rack Options	Keyboards and Monitors	
	TFT7600 Rackmount Keyboard Monitor US	AG052A
	TFT7600 Rackmount Keyboard Monitor UK	AG053A
	TFT7600 Rackmount Keyboard Monitor GR	AG054A

TFT7600 Rackmount Keyboard Monitor FR	AG055A
TFT7600 Rackmount Keyboard Monitor IT	AG056A
TFT7600 Rackmount Keyboard Monitor SP	AG057A
TFT7600 Rackmount Keyboard Monitor DEN	AG058A
TFT7600 Rackmount Keyboard Monitor NOR	AG059A
TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
TFT7600 Rackmount Keyboard Monitor SWI	AG061A
TFT7600 Rackmount Keyboard Monitor PORT	AG062A
TFT7600 Rackmount Keyboard Monitor BEL	AG063A
TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
TFT7600 Rackmount Keyboard Monitor RUS	AG065A
TFT7600 Rackmount Keyboard Monitor INTL	AG066A
HP TAA TFT7600 US Rkmntkybd 17in Monitor	AG067A
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 Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

HP KVM Switch Options

2x1x16 IP Console Switch with Virtual Media	AF601A
4x1x16 IP Console Switch with Virtual Media	AF602A
1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A
2x16 Server Console Switch with Virtual Media	AF600A
0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A
PS/2 Virtual Media Interface Adapter, 1 pack	AF604A

NOTE: Requires PS/2 and one USB port on server.

Server console switch 0x2x8	AF616A

Additional Options

	Server console switch 0x2x16	AF617A
	HP TAA Server console switch 0x2x16	AF626A
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x4 Console Switch	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
	HP Serial Console Server Options	
	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	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.	
USB and SD Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	1.44MB External USB Floppy Drive	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 1GB USB 2.0 Floppy Drive Key	442085-B21

Additional 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	U4528E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4529E
	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	U4530E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4538E
	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	U4539E
	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	U4540E
	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	U4541E
	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	U6311E
	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	U8333E
	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".
NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

HP ProLiant ML370 G5 Models

Minimum Memory
1 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (2 x 512 MB)

Maximum Memory Replaced with Optional Memory
Up to 64 GB of memory is available with the removal of the standard 1 GB of memory. With 2 memory cards: 4 GB PC2-5300 Fully Buffered DIMMs (DDR2-667) running at 533 MHz (16 x 4 GB with 2 memory cards).

NOTE: Not all FB DIMM sizes available at product launch.
NOTE: This chart does not represent all possible memory configurations.
NOTE: Memory DIMMs in systems with the Front Side Bus (FSB) running at 1333 MHz will run at 667 MHz and in systems with a FSB running at 1066 MHz or 667 MHz the memory DIMMs will run at 533 MHz.

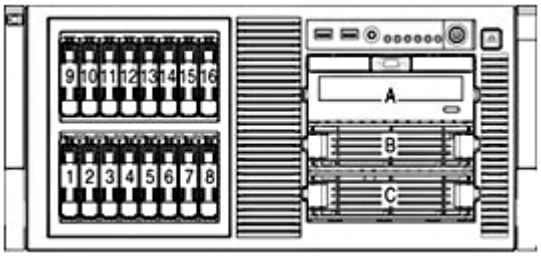
Memory			Slot							
			1	2	3	4	5	6	7	8
Standard	1 GB		512 MB	Empty	Empty	Empty	512 MB	Empty	Empty	Empty
Maximum	64 GB	1st card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB
		2nd card	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB

Following are memory options available from HP:

1 GB FBD PC2-5300 2 x 512 MB Single Rank Kit	397409-B21
2 GB FBD PC2-5300 2 x 1 GB Dual Rank Kit	397411-B21
2 GB FBD PC2-5300 2 x 1 GB Low Power Single Rank Kit	461826-B21
4 GB FBD PC2-5300 2 x 2 GB Dual Rank Kit	397413-B21
4 GB FBD PC2-5300 2 x 2 GB Low Power Dual Rank Kit	461828-B21
8 GB FBD PC2-5300 2 x 4 GB Dual Rank Kit	397415-B21
8 GB FBD PC2-5300 2 x 4 GB Low Power Dual Rank Kit	466440-B21
ML370 G5 Memory Board Kit	403766-B21

NOTE: 2 Memory Board required for support of 4:1 interleaving; 2 boards included on Performance models.

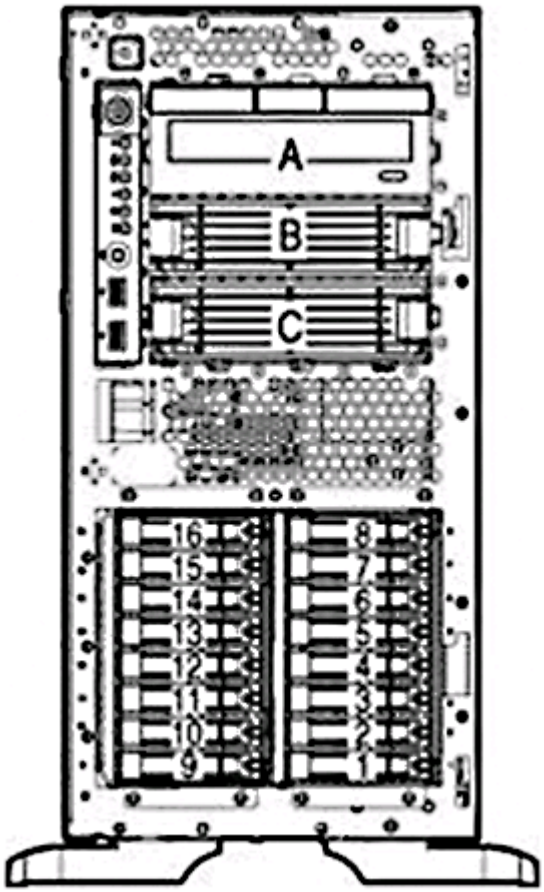
NOTE: Memory Option Kits include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, please visit: http://h18004.www1.hp.com/products/servers/platforms/energyefficient/.



A DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)

B, C DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
Optional media bay for internal tape drive

1-16 (16) hot-plug Serial-attached SCSI (SAS) drives supported



A DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)

B, C DVD-ROM Drive (Performance Models)/48x IDE CD-ROM Drive (Base and Entry Models)
Optional media bay for internal tape drive

1-16 (16) hot-plug Serial-attached SCSI (SAS) drives supported

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
IDE CD-ROM Drive	Up to 2	A, B	Integrated IDE
DVD-ROM Drive Option Kit (optional)	Up to 2	A, B	Integrated IDE

Hard Drives

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

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

SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP 300GB 3G SAS 10K DP 146GB 6G SAS 15K DP 146GB 3G SAS 15K DP 146GB 6G SAS 10K DP 146GB 3G SAS 10K DP 72GB 6G SAS 15K DP 72GB 3G SAS 10K DP 72GB 3G SAS 15K DP	Up to 16	1-16	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller 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

SAS Hot Plug SFF Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 16	1-16	HP Smart Array E200/64MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller 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

SATA Hot Plug SFF Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 16	1-16	HP Smart Array E200/64 MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P400/256 MB Controller HP Smart Array P400/512 MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

SATA Hot Plug SFF Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K 120GB 1.5G SATA 5.4K	Up to 16	1-16	HP 8 Internal Port SAS HBA with RAID NOTE: When using the 8 Internal Port SAS HBA with SATA Hard Drives, 1.5G SATA Hard Drives are required. NOTE: Transfer rate 1.5 Gb/s SATA, 3Gb/s SAS. HP Smart Array E200/64 MB Controller

			HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P400/256 MB Controller HP Smart Array P400/512 MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 16	1-16	HP 8 Internal Port SAS HBA with RAID NOTE: When using the 8 Internal Port SAS HBA with SATA Hard Drives, 1.5G SATA Hard Drives are required. NOTE: Transfer rate 1.5 Gb/s SATA, 3Gb/s SAS. HP Smart Array E200/64 MB Controller HP Smart Array E200/128 BBWC Controller HP Smart Array E500/256MB Controller HP Smart Array P400/256 MB Controller HP Smart Array P400/512 MB BBWC Controller HP Smart Array P600/256 BBWC Controller HP Smart Array P800/512 BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	1 per external VHDCI SCSI connector	External	HP Smart Array P600/256 BBWC Controller
60 Modular Smart Array	Up to 8	External	HP Smart Array E500/256MB Controller
	Up to 4		HP Smart Array P600/256 BBWC Controller
	Up to 8		HP Smart Array P800/512 BBWC Controller
70 Modular Smart Array	Up to 4	External	HP Smart Array E500/256MB Controller
	Up to 2		HP Smart Array P600/256 BBWC Controller
	Up to 4		HP Smart Array P800/512 BBWC Controller

Tape and Disk-Based Backup

NOTE: For a complete listing of compatible tape and disk-based backup offerings, please visit: www.hp.com/go/connect

	Position Supported	Controller	Controller/HBA Option Kit Part Number
Internal USB Tape Drives DAT 40 USB DAT 72 USB DAT 160 USB	B,C	USB 2.0 Port	N/A

Storage

USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
SCSI Tape Drives, Internal LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 DAT 40 DAT 72 DAT 160	B,C	HP SC11Xe Host Bus Adapter	412911-B21
SCSI Tape Drives, Internal LTO-3 Ultrium 960 LTO-4 Ultrium 1840	B+C	HP SC11Xe Host Bus Adapter	412911-B21
SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 960 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
SAS Tape Drives, Internal DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS	B,C	HP SC44Ge Host Bus Adapter	416096-B21
SAS Tape Drives, Internal LTO-4 Ultrium 1840 SAS	B+C	HP SC44Ge Host Bus Adapter	416096-B21
SAS Tape Drives, External DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS LTO-4 Ultrium 1840 SAS	External	HP SC44Ge Host Bus Adapter	416096-B21

Storage

1U Rack-Mount
3U Rack-Mount

SCSI Tape Automation, External DAT 72x10 Autoloader 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096 MSL6000	External	HP SC11Xe Host Bus Adapter	412911-B21
		HP U320e SCSI Host Bus Adapter NOTE: Recommended for MSL tape libraries.	AH627A
SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP SC44Ge Host Bus Adapter	416096-B21
Fibre Tape Automation, External MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks RDX Removable Disk Backup System, Internal RDX160 RDX320 RDX500	B,C	USB 2.0 Port	N/A
HP StorageWorks RDX Removable Disk Backup System, External RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A
HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2500i D2D4000i	External	Embedded Network Controller	N/A

Power Specifications

Part Number	380622-001
Spare Kit	403781-001
Operational Input Voltage Range (V rms)	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	950	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
Maximum Inrush Current (A peak)	30	30	30	30	30	30
Maximum Inrush Current duration (mS)	3	3	3	3	3	3

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

To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML370 G5
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Power Cords (13 Cord Sets, 1.83m)	Power Cord Part Number
Country	
APD	139867-005
APD	100613-008
APD	100614-009
Australia	100661-001
Europe	100614-009
France	100614-009
Germany	100614-009
Japan	139867-005
PRC	286498-001
PRC	286496-001
PRC	286496-001
UK	100613-008
US	121565-001

System Unit	Tower Dimensions (H x W x D) (with bezel)	18.38 x 8.63 x 28.5 in (46.67 x 21.92 x 72.39 cm)	
	Rack Dimensions (H x W x D) (with bezel)	8.63 x 17.5 x 26.5 in (21.92 x 44.45 x 67.31 cm)	
	Tower Weight (approximate)	Maximum (two hard drives, power supply, and processor installed)	77 lbs (34.93 kg)
		Minimum (one hard drive, power supply, and processor installed)	68 lbs (30.84 kg)
	Rack Weight (approximate)	Maximum (two hard drives, power supply, and processor installed)	68 lbs (30.84 kg)
		Minimum (one hard drive, power supply, and processor installed)	59 lbs (26.76 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC
		Rated Input Current	7.5A (at 100 VAC), 3.8A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	980W (at 100 VAC) 1035W (at 120 VAC) 1170W (at 240 VAC)
	BTU Rating	BTU/HR	3350 BTU/hr (at 100 VAC) 3530 BTU/hr (at 120 VAC) 3990 BTU/hr (at 240 VAC)
	Power Specifications	NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: ML370 G5 - Follow the instructions of the next screens	
	Power Supply Output (per power supply)	Rated Steady-State Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
		Maximum Peak Power	800 W (at 100 VAC) 850 W (at 120 VAC) 1000 W (at 200-240 VAC)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct

		sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
	Idle	
	LWAd	6.2 B for Redundant 6.3 B for Non-Redundant
	LpAm	43 dBA for Redundant 44 dBA for Non-Redundant
	Operating	
	LWAd	6.2 B for Redundant 6.3 B for Non-Redundant
	LpAm	43 dBA for Redundant 44 dBA for Non-Redundant
Emissions Classification (EMC)	FCC Rating	Class B
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
	NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

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	3 TB (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 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	3 TB (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, 1+0 (Striping & Mirroring) RAID 0 (Striping)

Technical Specifications

Two embedded NC373i Multifunction 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
		1000BaseTX (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)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)

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

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