*Overview*
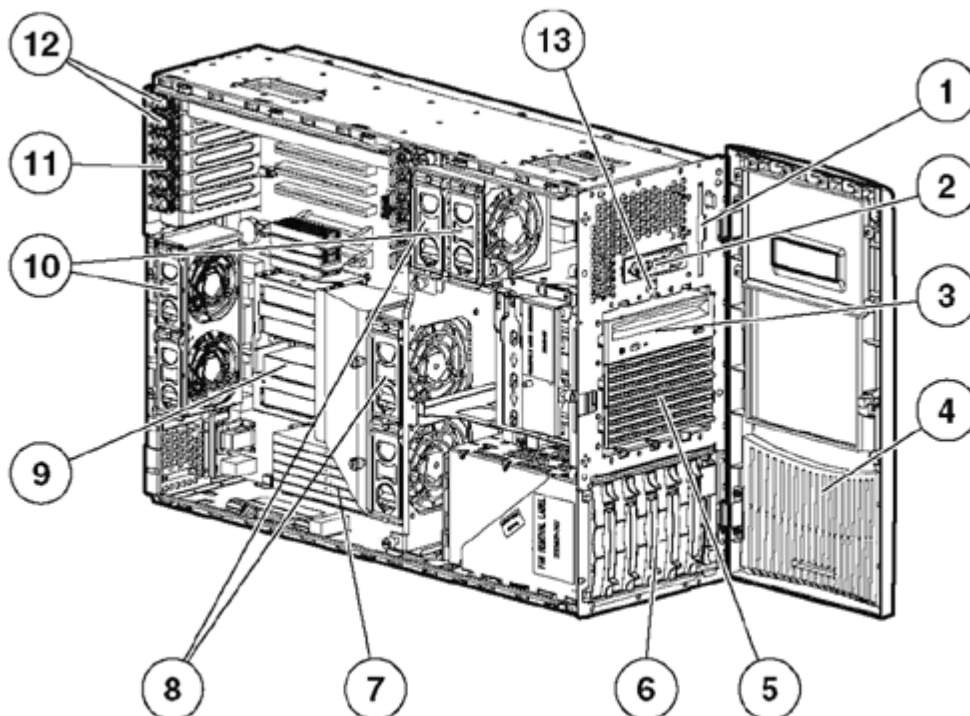


Ultra320 SCSI model shown above

1. 1.44 MB Diskette Drive
2. Front Panel LEDs (show server status)
3. 48X MAX CD-ROM
4. Front Bezel
5. Removable Media Bays
6. Six Hot Plug Ultra320 Drive Bays
7. 8 PC2-3200R Memory Slots

8. Hot Plug Fans (standard)
9. Intel Xeon Processors
10. Hot Plug Redundant Fans (Optional)
11. 2 PCI-Express Non-hot plug slots
12. 4 PCI-X 64-Bit/100-MHz Non-hot plug slots
13. USB 2.0 (on the front)Port

## What's New

- Dual-core 2.8GHz Intel Xeon processors with 2x2MB Level 2 cache (4MB total) are available on Factory Integrated models.

## At A Glance

The flagship ML370 G4 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:
  - Systems support up to two Intel Xeon Processors with Hyperthreading Technology (2 processors standard on all High Performance models)
  - Single-core and Dual-core Intel Xeon Processors with 2MB Level 2 cache offer blazing performance increases
    - Dual-core: 2.8 GHz with 2x2MB L2 (4MB total)
    - Single-core: 3.8 GHz, 3.6 GHz, 3.4 GHz, 3.2 GHz, 3.0 GHz and 2.8 GHz

*Overview*

- ○ Preconfigured High Performance models save valuable deployment time at a discounted bundle price
- **Memory:**
  - ○ Maximum 16 GB of 2-way interleaved PC2-3200R 400MHz DDR2 memory with Advanced ECC capabilities;
  - ○ 1 GB (2 x 512 MB) standard,
  - ○ 2 GB (2 x 1024 MB) standard on all High Performance models
- **Storage Controller:**
  - ○ Integrated Dual Channel Ultra320 SCSI Adapter
  - ○ Ultra320 High Performance Models ship with the Smart Array 6404/128 Controller
  - ○ SAS Array and SAS High Performance Models ship with the Smart Array P600/256 BBWC Controller
- **Internal Drive Support:**
  - ○ (8) small form factor (SFF) hot-plug drive bays for serial models or (6) hot-plug Ultra320 SCSI drive bays
  - ○ 2-bay Ultra320 drive cage to support a total of 8 Ultra320 hot plug drives included on Ultra320 High Performance models
  - ○ Optional duplex drive backplane splits the standard Ultra320 drive cage (2:4) into two separate data channels
- **Network Controller:**
  - ○ Integrated NC7781 PCI-X Gigabit Server Adapter
- **Expansion Slots:**
  - ○ 6 expansion slots - 2 PCI-Express x4 and 4 PCI-X 64-Bit/100-MHz (3 PCI-X slots and 2 PCI-Express slots available on all High Performance and Array models)
- **USB 2.0 Ports:**
  - ○ 3 Total: (1) front; (2) rear accessible ports
- **Redundancy:**
  - ○ Optional Hot plug redundant power supplies and cooling fans (Hot plug redundant fans and power supplies included on all High Performance models)
- **Management:**
  - ○ Powerful Integrated Lights-Out remote management technology embedded
  - ○ HP Integrated Lights-Out firmware includes HP Power Regulator for ProLiant - server level, policy based power management for industry leading energy efficiency and savings on system power and cooling costs. Also, introducing support for the draft DMTF System Management Architecture for Server Hardware Command Line Protocol standard
  - ○ HP Systems Insight Manager
  - ○ SmartStart 7.1+
- **Form Factor:**
  - ○ 5U Tower and Rack Models
- **Deployment/Serviceability:**
  - ○ Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability and in-rack tool-less access to major components
  - ○ Tool-free serviceability
  - ○ Diagnostic and Unit ID LEDs
- **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 SCSI/SAS hard drives. SATA hard drives have a one-year warranty.

# QuickSpecs

HP ProLiant ML370 Generation 4 (G4)

*Standard Features*

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

| | |
|---|---|
| **Processor**<br>One of the following<br>depending on Model | Dual-core Intel Xeon Processor 2.8 GHz/800MHz -2x2MB L2 cache (4MB total) |
| | Intel Xeon Processor 2.8 GHz/800MHz -2MB L2 cache |
| | Intel Xeon Processor 3.0 GHz/800MHz -2MB L2 cache |
| | Intel Xeon Processor 3.2 GHz/800MHz -2MB L2 cache |
| | Intel Xeon Processor 3.4 GHz/800MHz -2MB L2 cache |
| | Intel Xeon Processor 3.6 GHz/800MHz -2MB L2 cache |
| | Intel Xeon Processor 3.8 GHz/800MHz -2MB L2 cache |
| | NOTE: Up to 2 processors supported. |
| | NOTE: High Performance configurations include two processors up to 3.6 GHz. Models available with either 2MB or 1MB of Level 2 cache. |

| | |
|---|---|
| **Cache Memory** | 2MB Level 2 cache |

| | |
|---|---|
| **Chipset** | Intel E7520 Chipset<br>NOTE: For more information regarding Intel chipsets, please see the following URL:<br>http://www.intel.com/products/server/chipsets/. |

| | | |
|---|---|---|
| **Memory**<br>One of the following<br>depending on Model | Type | Single-ranked 2-way interleaved PC2-3200R running at 400MHz<br>NOTE: HP ProLiant ML370 G4 does not support dual ranked DIMMs. |
| | Standard | 1 GB (2 x 512 MB) |
| | Standard (High Performance SCSI models) | 2 GB (2 x 1024 MB) |
| | Standard (High Performance SAS models) | 2 GB (4 x 512 MB) |
| | Maximum | 16 GB |

| | |
|---|---|
| **Memory Protection** | Advanced ECC and Online Spare capabilities |

| | |
|---|---|
| **Network Controller** | Integrated NC7781 PCI-X Gigabit NIC (single port) |

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*Standard Features*

**Expansion Slots**

| Slot Number | Bus Speed | Bus Number* | Device Number** | Hot Plug | PCI Voltage | Notes |
|---|---|---|---|---|---|---|
| 1 | 64-bit/100MHz PCI-X | 3 | 1 | no | 3.3 Volt | Supported RILOE slot |
| 2 | 64-bit/100MHz PCI-X | 3 | 2 | no | 3.3 Volt | |
| 3 | 64-bit/100MHz PCI-X | 7 | 1 | no | 3.3 Volt | |
| 4 | 64-bit/100MHz PCI-X | 7 | 2 | no | 3.3 Volt | |
| 5 | PCI Express x4 | 11 | 0 | no | N/A | |
| 6 | PCI Express x4 | 14 | 0 | no | N/A | |

NOTE: Smart Array controller installed in Slot 1 on High Performance and Array models.
NOTE: x8 cards are supported but will run at x4 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).
NOTE: All PCI-X slots can only accept universal keyed PCI cards running at 3.3 volts.

**Remote Management**

Integrated Lights-Out (iLO) Standard Management

- Virtual Text Remote Console
- Virtual Power Button Control
- Virtual Unit Identification Light Control
- Virtual Serial Port Redirection
- Dedicated LAN Connectivity
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) Security
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

**Intelligent Manageability**

HP Systems Insight Manager
SmartStart
Management Agent
Redundant ROM
Remote Flash ROM
Remote Lights-Out Edition II (Optional)
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, SCSI/SAS hard drives and memory)

## Standard Features

| Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
|---|---|
| *One of the following depending on Model* | Smart Array 6402/128 Controller ship on Ultra320 High Performance Models |
| | Smart Array P600/256 BBWC Controller ship on SAS High Performance and Array Models |

| Storage | Diskette Drive | 1.44MB Diskette Drive |
|---|---|---|
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Hard Drives | None standard |

| Maximum Internal Storage | Hot Plug Ultra320 SCSI | 2.4TB | 6 x 300GB Ultra320 SCSI with standard internal hot plug drive cage + 2 x 300GB Ultra320 SCSI with optional ML3xx Two Bay Hot Plug Ultra320 SCSI Drive Cage |
|---|---|---|---|
| | Hot Plug SAS | 1.168TB | 8 x 146GB with standard internal hot plug Serial SCSI/ATA drive cage |

| Interfaces | Parallel | 1 |
|---|---|---|
| | Serial | 2 |
| | Pointing Device (Mouse) | 1 |
| | Graphics | 1 |
| | Keyboard | 1 |
| | Network RJ-45 | 1 |
| | iLO remote management port | 1 |
| | USB 2.0 Ports | 3 total: 2 on the rear and 1 on the front<br>NOTE: Please see the following URL for additional information regarding USB support:<br>http://h18004.www1.hp.com/products/servers/platforms/usb-support.html |
| | Dedicated USB 2.0 Port | 1 internal for USB tape support |

| Graphics | Integrated ATI Rage XL Video Controller with 8MB SDRAM Video Memory |
|---|---|

| Form Factor | Tower or Rack (5U) |
|---|---|

## Standard Features

| | | |
|---|---|---|
| **ProLiant Essentials Foundation Pack Software** | HP Systems Insight Manager | HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms. |

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

HP SIM provides organizations with the following benefits:

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

**SmartStart**

SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart. SmartStart version supported (minimum): SmartStart 7.10

**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 various new alerts as they become available, on a weekly or monthly basis.

**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 Software and Drivers download pages http://www.hp.com/go/support.

*Standard Features*

| | |
|---|---|
| Insight Diagnostics Online Edition | 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 selectively 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 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 – identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.
- Intelligent Networking Pack – detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus
- Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well 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).

| | |
|---|---|
| Optional Remote Management Packs | • Integrated Lights-Out Advanced Pack – upgrades the Integrated Lights-Out processor to full virtual presence and control with graphical console and virtual media. |

**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.

*Standard Features*

| | |
|---|---|
| **Industry Standard Compliance** | ACPI 1.0b Compliant<br>PCI 2.2 Compliant<br>WOL Support<br>Microsoft® Logo certifications<br>PXE Support |
| **Security** | Power-on password<br>Keyboard password<br>Diskette drive control<br>Diskette boot control<br>QuickLock, Network Server Mode<br>Parallel and serial interface control<br>Administrator's password<br>Disk configuration lock |
| **Server Power Cords** | 110V NEMA 12ft. (3.66m) cords included in the United States; localized cables included with geographic specific models in other world regions. IEC 10 ft. (3.05m) cords also included with rack models. Localized cables included with geographic specific models in other world regions. |
| **Power Supply** | 775 Watt-CE Mark Compliant Hot Plug Power Supply<br>Optional second Power Supply provides redundant capability |
| **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:<br>ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf. |
| **System Fans** | Three fans standard. Redundant fan kit includes three additional fans. |
| **Required Cabling** | For external storage cabling information, refer to the Web site at<br>http://h18000.www1.hp.com/products/servers/ProLiantML370/. |

*Standard Features*

| OS Support | Microsoft Windows 2000 Server |
| | Windows Server 2003 Server |

OS Support

Microsoft Windows 2000 Server
Windows Server 2003 Server
Novell NetWare
SCO OpenServer and OpenUNIX
LINUX (Red Hat, SuSE, United Linux)
VMware Virtualization Software

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 ML370 G4, 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

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/ProLiantdl380/index.html.

Installation of HP ProLiant ML370 G4 servers with Round Hole, Third Party or Telco Racks

ProLiant rack mount servers and tower-to-rack kits include snap-on quick deploy side rails designed to accommodate both round and square hole rack rails. Telco rack solutions for ProLiant servers are available through the following URL: http://www.racksolutions.com/hp.

*Standard Features*

**Factory Express Portfolio for Servers and Storage**

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

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

**HP Enterprise Configurator**

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

**HP ProLiant Smart Buys (NA only)**

The HP Smart Buy program offers mainstream business solutions at competitive prices with excellent availability and superior HP quality. It offers a wide range of industry-leading HP products at compelling prices, allowing you to receive richer configurations with additional options.
NOTE: ProLiant Smart Buys are available in NA only. For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf

**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.

*Standard Features*

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*

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

NOTE: ProLiant Smart Buys are available in NA only. For detailed specification information on ProLiant Smart Buys please click on the following link: ftp://ftp.compaq.com/pub/products/servers/smartbuys.pdf.

## Ultra320 SCSI Models (Processors with 2MB Level 2 cache)

| High Performance ML370T04 X3.4-2MB/800, 2GB 379916-xx1 | | |
|---|---|---|
| | Processor | Two Intel Xeon 3.4 GHz Processors standard |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 2 GB (2 x 1024 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Smart Array 6402/128 Controller installed in a PCI-X slot and the Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 2.4TB maximum (with optional Ultra320 hard drives and optional ML3xx Two Bay Hot Plug Ultra320 SCSI Drive Cage) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Tower (5U) |

| High Performance ML370R04 X3.4-2MB/800, 2GB 379917-xx1 | | |
|---|---|---|
| | Processor | Two Intel Xeon 3.4 GHz Processors standard |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 2 GB (2 x 1024 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Smart Array 6402/128 Controller installed in a PCI-X slot and the Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Availability | Hot Plug Redundant Fans and Power Supply included |
| | Internal Storage | 2.4TB maximum (with optional Ultra320 hard drives and optional ML3xx Two Bay Hot Plug Ultra320 SCSI Drive Cage) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Rack (5U) |

| ML370T04 X3.6-2MB/800, 1GB 379912-xx1 | | |
|---|---|---|
| | Processor | One Intel Xeon 3.6 GHz Processor standard (up to 2 supported) |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Tower (5U) |

## Ultra320 SCSI Models (Processors with 2MB Level 2 cache)

| ML370R04 X3.6-2MB/800, 1GB | | |
|---|---|---|
| 379913-xx1 | Processor | One Intel Xeon 3.6 GHz Processor standard (up to 2 supported) |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Rack (5U) |

| ML370T04 X3.4-2MB/800, 1GB | | |
|---|---|---|
| 379910-xx1 | Processor | One Intel Xeon 3.4 GHz Processor standard (up to 2 supported) |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Tower (5U) |

| ML370R04 X3.4-2MB/800, 1GB | | |
|---|---|---|
| 379911-xx1 | Processor | One Intel Xeon 3.4 GHz Processor standard (up to 2 supported) |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Rack (5U) |

## *Ultra320 SCSI Models (Processors with 2MB Level 2 cache)*

**ML370T04 X3.2-2MB/800, 1GB**
379908-xx1

| | |
|---|---|
| Processor | One Intel Xeon 3.2 GHz Processor standard (up to 2 supported) |
| Cache Memory | 2MB level 2 cache |
| Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| Hard Drive | None ship standard |
| Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| Optical Drive | 48x IDE CD-ROM Drive |
| Diskette Drive | 1.44 MB Diskette Drive |
| Form Factor | Tower (5U) |

**ML370R04 X3.2-2MB/800, 1GB**
379909-xx1

| | |
|---|---|
| Processor | One Intel Xeon 3.2 GHz Processor standard (up to 2 supported) |
| Cache Memory | 2MB level 2 cache |
| Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| Hard Drive | None ship standard |
| Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| Optical Drive | 48x IDE CD-ROM Drive |
| Diskette Drive | 1.44 MB Diskette Drive |
| Form Factor | Rack (5U) |

**ML370T04 X3.0-2MB/800, 1GB**
379906-xx1

| | |
|---|---|
| Processor | One Intel Xeon 3.0 GHz Processor standard (up to 2 supported) |
| Cache Memory | 2MB level 2 cache |
| Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| Hard Drive | None ship standard |
| Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| Optical Drive | 48x IDE CD-ROM Drive |
| Diskette Drive | 1.44 MB Diskette Drive |
| Form Factor | Tower (5U) |

## Ultra320 SCSI Models (Processors with 2MB Level 2 cache)

| ML370R04 X3.0-2MB/800, 1GB 379907-xx1 | | |
|---|---|---|
| | Processor | One Intel Xeon 3.0 GHz Processor standard (up to 2 supported) |
| | Cache Memory | 2MB level 2 cache |
| | Memory | 1 GB (2 x 512 MB) of 2-way interleaved capable PC2-3200R DDR2 running at 400MHz, with Advanced ECC capabilities |
| | Network Controller | Integrated NC7781 PCI-X Gigabit Server Adapter |
| | Storage Controller | Integrated Dual Channel Ultra320 SCSI Adapter |
| | Hard Drive | None ship standard |
| | Internal Storage | 1.8TB maximum (with optional Ultra320 hard drives) |
| | Optical Drive | 48x IDE CD-ROM Drive |
| | Diskette Drive | 1.44 MB Diskette Drive |
| | Form Factor | Rack (5U) |

**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 |

*Configuration Information - Factory Integrated Models (North America only)*

NOTE: For Configure to Order requirements within EMEA region, please consult local Sales Contact.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order (CTO) 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 ML370G4 Ultra320 Rack CTO Chassis** (North America)      360729-405

Factory Integrated Model ships with:

Integrated NC7781 PCI-X Gigabit Server Adapter
Integrated dual channel Ultra320 SCSI adapter
Six Hot Plug Ultra320 Drive Bays
6 expansion slots – 2 PCI-Express x4 and 4 PCI-X 64-bit 100 MHz
Integrated Lights-Out (iLO)
775 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Rack (5U)

**HP ProLiant ML370G4 Ultra320 Tower CTO Chassis** (North America)      360730-405

Factory Integrated Model ships with:

Integrated NC7781 PCI-X Gigabit Server Adapter
Integrated dual channel Ultra320 SCSI adapter
Six Hot Plug Ultra320 Drive Bays
6 expansion slots – 2 PCI-Express x4 and 4 PCI-X 64-bit 100 MHz
Integrated Lights-Out (iLO)
775 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Keyboard
2-button Mouse
Tower (5U)

**HP ProLiant ML370G4 SAS Rack CTO Chassis** (North America)      394121-405

Factory Integrated Model ships with:

Integrated NC7781 PCI-X Gigabit Server Adapter
Eight Hot Plug SFF Serial SCSI/ATA Drive Bays
5 expansion slots available – 2 PCI-Express x4 and 3 PCI-X 64-bit 100 MHz
Integrated Lights-Out (iLO)
775 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Rack form factor (5U)

**HP ProLiant ML370G4 SAS Tower CTO Chassis** (North America)      394122-405

Factory Integrated Model ships with:

Integrated NC7781 PCI-X Gigabit Server Adapter
Eight Hot Plug SFF Serial SCSI/ATA Drive Bays
5 expansion slots available – 2 PCI-Express x4 and 3 PCI-X 64-bit 100 MHz
Integrated Lights-Out (iLO)
775 Watt-CE Mark Compliant Hot Plug Power Supply
Three fans
Tower form factor (5U)

*Configuration Information - Factory Integrated Models (North America only)*

## Step 1A: If SAS Model, Choose SAS Starter Kit or Controller (only one of the following)

| | | |
|---|---|---|
| SAS Controller | HP Smart Array P600/256 BBWC Controller | 337972-B21 |
| | NOTE: This is a required selection if one of the two following SAS Starter Kits is not selected. If choosing this part number, 2.5" SAS hard drives must still be selected under Step 4. | |
| SAS Starter Kit | NOTE: SAS Starter Kits are not compatible with the U320 SCSI models. | |
| | SAS Starter Kit – 36GB | 396221-B21 |
| | NOTE: Includes Smart Array P600/256 BBWC Controller and (2) 36GB SFF SAS Universal Hard Drives. | |
| | SAS Starter Kit – 72GB | 396220-B21 |
| | NOTE: Includes Smart Array P600/256 BBWC Controller and (2) 72GB SFF SAS Universal Hard Drives. | |

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

| | | |
|---|---|---|
| Processors | Intel X3.8GHz/800-2MB 370G4 FIO BASE | 378752-L21 |
| | Intel X3.6GHz/800-2MB 370G4 FIO BASE | 378751-L21 |
| | Intel X3.4GHz/800-2MB 370G4 FIO BASE | 378750-L21 |
| | Intel X3.2GHz/800-2MB 370G4 FIO BASE | 378749-L21 |
| | Intel X3.0GHz/800-2MB 370G4 FIO BASE | 378748-L21 |
| | Intel X2.8GHz/800-2MB 370G4 FIO BASE | 397645-L21 |
| | NOTE: One additional xxxxxx-B21 processor for each HP ProLiant ML370 server may be ordered. If selecting a Performance Pack option in Step 3 (380099-001, 383195-001, 384201-001), a second processor (311583-B21, 378750-B21, or 378751-B21) is included and should not be ordered. | |
| Base Memory | 1 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 512 MB) | 343055-B21 |
| | 2 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB) | 343056-B21 |
| | 4 GB of Single-Ranked PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB) | 343057-B21 |
| Optical Drives | HP ProLiant 48X CD w/o SCREWS | 367920-B21 |
| | HP ProLiant 16X DVD-ROM Drive | 217053-B21 |
| | CD-RW/DVD-ROM Combo Drive Option Kit | 331346-B21 |
| | HP DVD+R/RW 16X Half Height | 383974-B21 |

## Step 3: Choose Additional Factory Integratable Options

| | | |
|---|---|---|
| Performance Packs | The HP ProLiant ML370 G4 Performance Packs are necessary to configure a HP ProLiant ML370 G4 High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Ultra320 Performance Pack includes a 2nd processor, redundant fans and power supplies, extra 2-bay HDD drive cage and Smart Array 6402 controller with 128MB battery-backed write cache (installed in a PCI-X slot). | |
| | ML370G4 3.4 2M Ultra320 SCSI Perf. Pack, US | 383195-001 |
| | NOTE: The SAS SCSI/ATA Performance Pack includes a 2nd processor, extra 1GB of memory, redundant fans and power supplies. | |
| | ML370G4 3.6 2M SAS SCSI/ATA Perf. Pack, US | 384201-001 |

*Configuration Information - Factory Integrated Models (North America only)*

## 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 configurable. Please contact your local sales representative for additional information.

| HP ProLiant ML370 Unique Options | | |
|---|---|---|
| | ML370 Tower to Rack Conversion Kit | 356545-B21 |
| | G4 Hot Plug Redundant Power Supply Option Kit (U.S.) | 356544-001 |
| | G4 Hot Plug Redundant Power Supply Option Kit (Australia) | 356544-011 |
| | G4 Hot Plug Redundant Power Supply Option Kit (EURO) | 356544-021 |
| | G4 Hot Plug Redundant Power Supply Option Kit (UK) | 356544-031 |
| | G4 Hot Plug Redundant Power Supply Option Kit (Japan) | 356544-291 |
| | G4 Hot Plug Redundant Power Supply Option Kit (IEC Cord only) (Worldwide) | 356544-B21 |
| | Redundant Hot Plug Fan Option Kit | 225073-B21 |
| | ML370 G4 SAS (Serial Attached SCSI/ATA) drive cage option | 383887-B21 |

NOTE: Requires Smart Array P600/256 BBWC Controller installed in PCI-X slot.
NOTE: When 3 or more SAS hard drives are installed in the HP ProLiant ML370 G4 SAS-enabled Server, the system becomes an FCC Class A device.

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**ProLiant Essentials Value Pack Software**

**ProLiant Essentials Intelligent Networking Pack**

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

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

NOTE: For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12062_div/12062_div.HTML

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

NOTE: For additional ProLiant Intelligent Networking Pack – Linux License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12327_div/12327_div.HTML

**ProLiant Essentials Performance Management Pack**

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

NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.
NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp.

NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11925_div/11925_div.HTML

**ProLiant Essentials Rapid Deployment Pack Windows Edition Release**

| | |
|---|---|
| Rapid Deployment Pack, Single-Server License | 267196-B21 |

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

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

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

NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.HTML

**ProLiant Essentials Workload Management Pack**

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

*Options*

NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11452_div/11452_div.HTML

### ProLiant Essentials Virtualization Management Software

ProLiant Essentials Virtual Machine Management Pack, Single-Server License — 435661-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

ProLiant Essentials Server Migration Pack, Single-Migration License — 435663-B21
NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.
NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.

NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12328_div/12328_div.HTML

### ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License — 371645-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.

NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12111_div/12111_div.HTML

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

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**Remote Management**

### Integrated Lights-Out Advanced Pack

Integrated Lights-Out Advanced Pack, 1 server — 263825-B21
Featuring: Sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.

NOTE: For additional Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11052_div/11052_div.HTML

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**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/Division/11073.html
(Worldwide)

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*Options*

| Processor | | |
|---|---|---|
| Dual-core Intel Xeon X2.8-2x2MB/800MHz Processor Option Kit | | 399129-B21 |
| NOTE: This kit is not backwards compatible, existing systems cannot be upgraded. | | |
| Intel Xeon X3.8-2MB/800MHz Processor Option Kit | | 378752-B21 |
| Intel Xeon X3.6-2MB/800MHz Processor Option Kit | | 378751-B21 |
| Intel Xeon X3.4-2MB/800MHz Processor Option Kit | | 378750-B21 |
| Intel Xeon X3.2-2MB/800MHz Processor Option Kit | | 378749-B21 |
| Intel Xeon X3.0-2MB/800MHz Processor Option Kit | | 378748-B21 |
| Intel Xeon X2.8-2MB/800MHz Processor Option Kit | | 397645-B21 |
| Intel Xeon X3.6-1MB/800MHz Processor Option Kit | | 311584-B21 |
| Intel Xeon X3.4-1MB/800MHz Processor Option Kit | | 311583-B21 |
| Intel Xeon X3.2-1MB/800MHz Processor Option Kit | | 374492-B21 |

| Memory | | |
|---|---|---|
| 1 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 512 MB) | | 343055-B21 |
| 2 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB) | | 343056-B21 |
| 4 GB of Single-Ranked PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB) | | 343057-B21 |
| NOTE: The HP ProLiant ML370 G4 does not support dual ranked memory. | | |

| Internal Storage | | |
|---|---|---|
| ML3xx Two Bay Hot Plug Ultra320 SCSI Drive Cage | | 244059-B21 |
| NOTE: The drive cage option kit (PN 244059-B21) has one 1" drive bay and one 1.6" drive bay, installed in two available removable media bays. | | |
| Duplex Ultra320 SCSI Backplane Option Kit | | 339323-B21 |
| ML370 G4 SAS (Serial Attached SCSI/ATA) drive cage option | | 383887-B21 |
| NOTE: Requires Smart Array P600 Controller installed in PCI-X slot. | | |
| NOTE: When 3 or more SAS hard drives are installed in the HP ProLiant ML370 G4 SAS-enabled Server, the system becomes an FCC Class A device. | | |

| Optical Drives | | |
|---|---|---|
| 16X DVD-ROM Drive Option Kit (Carbon) | | 217053-B21 |
| CD-RW/DVD-ROM Combo Drive Option Kit | | 331346-B21 |
| HP DVD+R/RW 16X Half Height | | 383974-B21 |
| HP ProLiant 48X CD w/o SCREWS | | 367920-B21 |

*Options*

| Hard Drives | Ultra320 SCSI – Universal Hot Plug | |
|---|---|---|
| | HP 300GB U320 10K Universal HDD | 350964-B22 |
| | HP 146GB U320 10K Universal HDD | 286716-B22 |
| | HP 72GB U320 10K Universal HDD | 286714-B22 |
| | HP 300GB U320 15K Universal HDD | 411089-B22 |
| | HP 146GB U320 15K Universal HDD | 347708-B22 |
| | HP 72GB U320 15K Universal HDD | 286778-B22 |
| | HP 36GB U320 15K Universal HDD | 286776-B22 |

**NOTE:** All Ultra320 Universal Hard Drives are backward compatible to Ultra2 or Ultra3 speeds.
**NOTE:** Please see the 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/11531_div/11531_div.HTML
(Worldwide)

SFF SATA Hot Plug

| | HP 60GB 1.5G SATA 5.4K SFF HDD | 379306-B21 |
|---|---|---|

**NOTE:** SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:
http://h18000.www1.hp.com/products/quickspecs/12091_div/12091_div.HTML
(Worldwide)

SFF SAS – 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:** All SAS Universal Hard Drives are supported ONLY by SAS models.
**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_div/12244_div.HTML
(Worldwide)

*Options*

**Storage Controllers**

SAS Controllers

**Smart Array P600 Controller**

| | |
|---|---|
| Smart Array P600/256 BBWC Controller | 337972-B21 |

NOTE: Serial SCSI/ATA.

| | |
|---|---|
| 512MB DDR BBWC Upgrade | 372538-B21 |

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12247_div/12247_div.HTML
(Smart Array P600 Controller)

SCSI Controllers

| | |
|---|---|
| Smart Array 6402/128 Controller | 273915-B21 |

NOTE: Ultra320 SCSI.

| | |
|---|---|
| Smart Array 6404/256 Controller | 273914-B21 |

NOTE: Ultra320 SCSI.

| | |
|---|---|
| Smart Array 641 Controller | 291966-B21 |

NOTE: Ultra320 SCSI.

| | |
|---|---|
| Smart Array 642 Controller | 291967-B21 |

NOTE: Ultra320 SCSI.

| | |
|---|---|
| 128-MB BBWC (Battery-Backed Write Cache) Enabler | 351580-B21 |

NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.

| | |
|---|---|
| 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |

NOTE: Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML
(Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML
(Smart Array 641)
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/11943_div/11943_div.HTML
(Single Channel Ultra320 SCSI HBA)

SAS HBA

| | |
|---|---|
| HP 8 Internal Port SAS HBA with RAID | 347786-B21 |

NOTE: Please see the HBA QuickSpecs for additional information:
http://h18004.www1.hp.com/products/quickspecs/12332_div/12332_div.html
(8 Internal Port SAS HBA)

## Options

| Communications | HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter | 367132-B21 |
|---|---|---|
| | HP NC310F PCI-X 1000SX Gigabit Server Adapter | 368169-B21 |
| | HP 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 NC373T PCI Express Multifunction Gigabit Server Adapter | 394791-B21 |
| | HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter | 394795-B21 |
| | 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 and the NC150T) on the option list can be used for redundancy with the embedded NC7781 Network Controller. When teaming with other NICs or with the embedded NIC, the lack of Jumbo Frames and LSO features on the NC1020 and NC150T will cause high end NICs to have those features disabled. (e.g. incompatibility issues with the other option NICs for that platform).

| Redundant Options | Hot Plug Redundant Power Supply Option Kit (NEMA cord) (U.S.) | 356544-001 |
|---|---|---|
| | Hot Plug Redundant Power Supply Option Kit (Australia) | 356544-011 |
| | Hot Plug Redundant Power Supply Option Kit (EURO) | 356544-021 |
| | Hot Plug Redundant Power Supply Option Kit (UK) | 356544-031 |
| | Hot Plug Redundant Power Supply Option Kit (Japan) | 356544-291 |
| | Hot Plug Redundant Power Supply Option Kit (IEC cord only) (Worldwide) | 356544-B21 |
| | Redundant Hot Plug Fan Option Kit | 225073-B21 |

| Management Options | Remote Insight Lights-Out Edition II (NA, LA) | 227251-001 |
|---|---|---|
| | Remote Insight Lights-Out Edition II (EMEA) | 227251-021 |
| | Remote Insight Lights-Out Edition II (APD, Japan) | 227251-371 |

**Tape Drives**

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

**Hot Plug Tape Drives**

| HP StorageWorks DAT 72 SCSI Hot-plug Tape Drive (Carbon) | Q1529A |
|---|---|

NOTE: Not RoHS-compliant.

**USB Tape Drives**

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

**SAS Tape Drives**

NOTE: Connecting hard drive cage and SAS tape to the same SAS Controller 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 920 SAS Internal Tape Drive | EH847A |
|---|---|

| | |
|---|---|
| HP StorageWorks Ultrium 920 SAS External Tape Drive | EH848A |

**Ultrium Tape Drives**

| | |
|---|---|
| HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite) | DW064A |
| HP StorageWorks Ultrium 460 Internal Tape Drive (Carbon) | Q1518A |
| HP StorageWorks Ultrium 448 Internal Tape Drive (Carbonite) | DW016A |
| HP StorageWorks Ultrium 960 Internal Tape Drive (Carbonite) | Q1538A |

**NOTE:** Please see the HP StorageWorks Ultrium Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:
http://h18006.www1.hp.com/products/quickspecs/11739_div/11739_div.html (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/12128_div/12128_div.html (Worldwide)

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

**DAT Drives**

| | |
|---|---|
| HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon) | Q1522B |

**NOTE:** Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:
http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML (Worldwide)
For an up-to-date listing of the latest O/S and software support details for HP DAT 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 3U Rack-mount kit | 274338-B22 |

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

**NOTE:** Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:
http://h18000.www1.hp.com/products/quickspecs/10854_div/10854_div.HTML (Worldwide)

*Options*

| Tape Autoloaders | **HP StorageWorks DAT Autoloader** | |
|---|---|---|
| | HP StorageWorks DAT 72x10 tape autoloader | AE313A |
| | **HP StorageWorks 1/8 Tape Autoloader** | |
| | HP StorageWorks 1/8 Ultrium 960 Tape Autoloader | AF204A |
| | HP StorageWorks 1/8 Ultrium 448 Tape Autoloader | AF203A |
| | HP StorageWorks 1/8 Ultrium 232 Tape Autoloader | AF202A |
| | 1/8 Tape Autoloader Rackmount Kit | C9268R |

NOTE: Required to install the 1/8 tape autoloader in a standard 19-inch rack

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 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 960 Drive Library | AG322A |
| | HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Drive Library | AG324B |
| | HP StorageWorks MSL4048 2 Ultrium 960 Drive Library | AG323A |
| | HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Drive Library | AG325B |
| | **HP StorageWorks MSL6000 Tape Library** | |
| | **Ultrium 960 technology** | |
| | HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library | AD606B |
| | HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library | AD608B |
| | HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library | AD607B |
| | HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library | AD609B |
| | **Ultrium 460 technology** | |
| | HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library | AD598B |
| | HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library | AD600B |
| | HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library | AD599B |
| | HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library | AD601B |

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

## Options

| | | |
|---|---|---|
| **HP Data Protector Express Software** | HP DP Express Backup Server Upgrade for ProLiant Software | BB117AP |
| | HP DP Express Package for Microsoft Small Business Server | BB118AA |
| | NOTE: Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: http://h18000.www1.hp.com/products/quickspecs/12337_div/12337_div.html (Worldwide) | |
| | NOTE: To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later). | |
| **Cluster Options** | ProLiant Cluster Starter Kit | 364023-B22 |
| | NOTE: For additional information regarding the ProLiant Cluster Starter Kit please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11935_div/11935_div.html (Worldwide) | |
| | HP HA/F200 for Entry SAN Cluster | 364026-B22 |
| | NOTE: For additional information regarding the ProLiant Cluster for Entry Level SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11932_div/11932_div.html (Worldwide) | |
| | ProLiant Cluster HA/F500 for the Enterprise SAN | 364024-B21 |
| | NOTE: For additional information regarding the ProLiant Cluster HA/F500 for Enterprise SAN please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11933_div/11933_div.html (Worldwide) | |
| | HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (2 node license cluster kit) | 305199-B26 |
| | HP Serviceguard for Linux A.11.16 for SUSE SLES 9 & 10 and Red Hat EL 3 & 4 (single license version) | 307754-B26 |
| | HP Serviceguard for Linux and Red Hat Global File System - 1 year subscription | T2798AA#001 |
| | HP Serviceguard for Linux and Red Hat Global File System - 3 years subscription | T2798AA#003 |
| | NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide) | |
| **HP StorageWorks Modular Smart Array 20** | HP StorageWorks Modular Smart Array 20 | 335921-B21 |
| | NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. | |
| | HP StorageWorks Modular Smart Array 20 Starter Kit | 366172-B21 |
| | NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. | |
| | NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives. | |

*Options*

| | | |
|---|---|---|
| HP StorageWorks Modular Smart Array 30 | HP StorageWorks Modular Smart Array 30 SB<br>NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies | 302969-B21 |
| | HP StorageWorks Modular Smart Array 30 DB<br>NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies | 302970-B21 |
| | NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives. | |
| 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 options and configuration information at http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.HTML (Worldwide) | |
| HP StorageWorks Modular Smart Array 500 | HP StorageWorks Modular Smart Array 500 Generation 2 | 335880-B21 |
| | NOTE: Please see the Modular Smart Array 500 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11050_div/11050_div.HTML (Worldwide) | |
| HP StorageWorks Modular Smart Array 1000 | HP StorageWorks Modular Smart Array 1000 | 201723-B22 |
| | NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide) | |
| HP StorageWorks Modular Smart Array 1500 cs | Modular Smart Array 1500 Controller Shelf | AA986A |
| | NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs | |
| StorageWorks Options | NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html | |
| | 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 |

*Options*

| Uninterruptible Power Supply - Tower | HP, T1500 UPS NA | AF406A |
| | HP, T1500 UPS JPN | AF407A |
| | HP, T1500 UPS INTL | AF408A |
| | HP, R/T 2200 UPS NA | AF409A |
| | HP, R/T 2200 UPS JPN | AF410A |
| | HP, R/T 2200 UPS INTL | AF411A |

| Uninterruptible Power Systems - Rack UPS | HP, R1.5kVA UPS, 1U, NA | AF419A |
| | HP, R1.5kVA UPS, 1U, INTL | AF418A |
| | HP, R1.5kVA UPS, 1U, JPN/TW | AF421A |
| | HP R3000 VA UPS, 2U, DTC, INTL<br>NOTE: Replaces non-RoHs compliant part numbers 192186-B31, 192186-B32, 192186-B33, 192186-AR1. | AF414A |
| | HP R3000 VA UPS, 2U, L5-30, NA<br>NOTE: Replaces non-RoHs compliant part number 192186-001. | AF422A |
| | HP R3000 VA UPS, 2U, L6-20, NA<br>NOTE: Replaces non-RoHs compliant part number 192186-002. | AF423A |
| | HP R3000 VA UPS, 2U, L6-20, JPN<br>NOTE: Replaces non-RoHs compliant part number 192186-292. | AF424A |
| | HP R3000 VA UPS, 2U, L5-30, JPN<br>NOTE: Replaces non-RoHs compliant part number 192186-291. | AF425A |
| | HP R5500 VA UPS, INTL<br>NOTE: Replaces non-RoHs compliant part number 326529-B31. | AF416A |
| | HP R5500 VA UPS, NA/JPN<br>NOTE: Replaces non-RoHs compliant part number 326529-D71. | AF426A |

| HP Monitored Power Distribution Unit (PDU) | **HP Monitored Power Distribution Unit: Full Rack Version** | |
| | HP 17.3 kVA S2324 Monitored PDU- dual input, 3U, 24A (NA/JPN)<br>NOTE: Replaces non-RoHs compliant part number 370959-D71. | AF503A |
| | HP 8.3 kVA S1324 Monitored PDU- single input, 3U, 24A (NA/JPN)<br>NOTE: Replaces non-RoHs compliant part number 370960-D71. | AF504A |
| | HP 16.6 kVA S2140 Monitored PDU- dual input, 1U, 40A (NA/JPN)<br>NOTE: Replaces non-RoHs compliant part number 37061-D71. | AF505A |
| | HP 8.6 S1140 Monitored PDU- single input, 1U, 40A (NA/JPN)<br>NOTE: Replaces non-RoHs compliant part number 370962-D71. | AF506A |
| | HP 22.1 kVA S2316 Monitored PDU- dual input, 3U, 16A (INTL)<br>NOTE: Replaces non-RoHs compliant part number 370963-B31. | AF507A |
| | HP 11 kVA S1316 Monitored PDU- single input, 3U, 16A (INTL)<br>NOTE: Replaces non-RoHs compliant part number 370964-B31. | AF508A |
| | HP 14.7 kVA S2132 Monitored PDU- dual input, 1U, 32A (INTL)<br>NOTE: Replaces non-RoHs compliant part number 370965-B31. | AF509A |
| | HP 7.3kVA S1132 Monitored PDU- single input, 1U, 32A (INTL)<br>NOTE: Replaces non-RoHs compliant part number 370966-B31. | AF510A |

## Options

| | | |
|---|---|---|
| **Modular Power Distribution Units 1U/0U** (up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks). | HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) | 252663-D71 |
| | **NOTE:** The above mPDU may also be used to connect to the low volt model of the UPS R3000 XR. | |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan) | 252663-D72 |
| | **NOTE:** L6-30 input. | |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l) | 252663-B31 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) | 252663-B21 |
| | **NOTE:** The 40A model has a hardwired input. | |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) | 252663-B24 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 40A, Attached Cord (NA/JPN) | 252663-D73 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 40A, Attached Cord (Int'l) | 252663-B32 |
| | **NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR. | |
| | **NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide) | |

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

| | | |
|---|---|---|
| **Other** | ProLiant ML3xx Internal to External SCSI Cable Option Kit (VHDCI) | 333370-B21 |
| | ProLiant ML3xx Internal to External SCSI Cable Option Kit (HD68) | 159547-B22 |

| | | |
|---|---|---|
| **Rack Conversion Kit** | ML370 Tower to Rack Conversion Kit | 356545-B21 |
| | Shipping Kit for Round Hole Racks | 371482-B21 |
| | **NOTE:** Required when shipping server pre-installed in round hole rack. Square hole pre-configured rack shipping hardware included with server mounting rails. | |

*Options*

| | | |
|---|---|---|
| **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_div/12074_div.HTML (Worldwide)

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

| | | |
|---|---|---|
| **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_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 10000 Series** (Graphite Metallic) | 10642 (42U) Infrastructure Rack (Low Voltage) | 379006-001 |
| | 10642 (42U) Infrastructure Rack (High Voltage) | 379005-001 |
| | HP S10614 (14U) Rack Cabinet - Shock Pallet | 292302-B22 |
| | HP Rack 10842 (42U, 800mm wide) - Pallet | 257415-B21 |
| | HP Rack 10842 (42U, 800mm wide) - Shock Pallet | 257415-B22 |
| | HP Rack 10647 (47U) - Pallet | 245160-B21 |
| | HP Rack 10647 (47U) - Crated | 245160-B23 |
| | HP Rack 10622 (22U) - Pallet | 245163-B21 |
| | HP Rack 10622 (22U) - Shock Pallet | 245163-B22 |
| | HP Rack 10622 (22U) - 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 HP 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_div/10995_div.HTML (Worldwide)

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

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

*Options*

| HP KVM Switch Options | 2x1x16 IP Console Switch with Virtual Media | AF601A |
|---|---|---|
| | 4x1x16 IP Console Switch with Virtual Media | AF602A |
| | 2x16 Server Console Switch with Virtual Media | AF600A |
| | PS/2 Virtual Media Interface Adapter, 1 pack | AF604A |

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

| | | |
|---|---|---|
| | Server Console Switch (KVM), 0 x 1 x 8 port | 336044-B21 |
| | Server Console Switch (KVM), 0 x 2 x 16 port | 336045-B21 |
| | PS/2 Interface Adapter, 1 pack | 262588-B21 |
| | PS/2 Interface Adapter, 8 pack | 262587-B21 |
| | USB Interface Adapter, 1 pack | 336047-B21 |
| | Serial Interface adapter - 1 Pack with power supply | 373035-B21 |

**NOTE:** Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

| | | |
|---|---|---|
| | HP 1x 4 USB/PS2 KVM Switch, TT (NA/JPN) | 371301-D71 |
| | HP 1x 4 USB/PS2 KVM Switch, TT (AU/NZ) | 371301-011 |
| | HP 1x 4 USB/PS2 KVM Switch, TT (UK) | 371301-031 |
| | HP 1x 4 USB/PS2 KVM Switch, TT (EU) | 371301-A21 |
| | HP 1x 4 USB/PS2 KVM Switch, RM (ALL) | 371302-B21 |
| | HP PS2 KVM Cable with audio, 6', 2-pack | 371730-B21 |
| | HP USB KVM Cable with audio, 6', 2-pack | 371729-B21 |

**NOTE:** For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

| HP Serial Console Server Options | HP 16 Port Serial Console Server (worldwide) | AF101A |
|---|---|---|
| | HP 48 Port Serial Console Server (worldwide) | AF102A |
| | Serial Adapter, RJ45-DB9 DCE Female, 1 Pack | AF103A |
| | Serial Adapter, RJ45-DB9 DCE Female, 8 Pack | AF110A |

**NOTE:** Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.

**NOTE:** For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.

*Options*

**Service and Support Offerings** (HP Care Pack Services)

*Hardware Services On-site Service*

| | |
|---|---|
| 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic | 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.

# QuickSpecs

*Memory*

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

HP ProLiant ML370 G4 Models

Standard Memory

1 GB PC2-3200R Single-ranked Memory comes installed (2 x 512 MB SDRAM)

NOTE: HP ProLiant ML370 G4 does not support dual-ranked memory.

Standard Memory Replaced with Optional Memory

Up to 16 GB of memory is available with the removal of the standard 1 GB of memory and the optional installation of 16 GB PC2-3200R Memory Option Kit (8 x 2 GB)

NOTE: This chart does not represent all possible memory configurations.

| Memory | | Slot | | | | | | | |
|--------|------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Standard | 1 GB | 512 MB | 512 MB | Empty | Empty | Empty | Empty | Empty | Empty |
| Optional | 7 GB | 512 MB | 512 MB | 1 GB | 1 GB | 1 GB | 1 GB | 1 GB | 1 GB |
| Maximum | 16 GB | 2 GB | 2 GB | 2 GB | 2 GB | 2 GB | 2 GB | 2 GB | 2 GB |

Following are memory options available from HP:

- 1 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)      343055-B21
- 2 GB of Advanced PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)      343056-B21
- 4 GB of Single-Ranked PC2 PC3200R DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB)      343057-B21
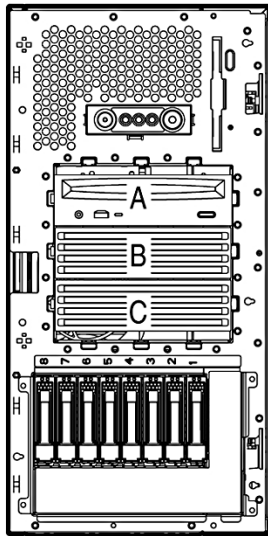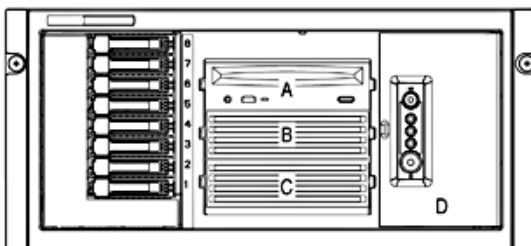
*Storage*
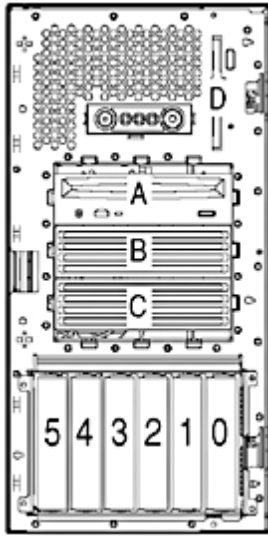
| | |
|---|---|
| 0 - 5 | 6 Hot Pluggable Hard Drive Bays |
| A | 48x IDE CD-ROM Drive |
| B, C | Two available half height bays |
| D | 1.44 MB Diskette Drive |
| 0 - 5 | 6 x Hot Pluggable Hard Drive Bays |
| A | 48x IDE CD-ROM Drive |
| B, C | Two available half height bays |
| D | 1.44 Diskette Drive |
| 0 - 7 | 8 x Hot Pluggable Hard Drive Bays |
| A | 48x IDE CD-ROM Drive |
| B, C | Two available half height bays |
| D | 1.44 Diskette Drive |
| 0 - 7 | 8 x Hot Pluggable Hard Drive Bays |
| A | 48x IDE CD-ROM Drive |
| B, C | Two available half height bays |
| D | 1.44 Diskette Drive |
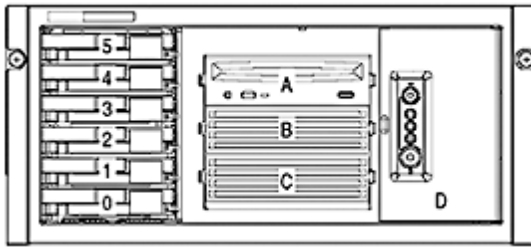
# QuickSpecs

*Storage*

## Drive Support

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| **Removable Media** | | | |
| 1.44-MB Diskette Drive | Up to 1 | D | Integrated |
| IDE CD-ROM Drive | Up to 2 | A, B | Integrated IDE |
| DVD-ROM Drive Option Kit (optional) | Up to 2 | A, B | Integrated IDE |
| ML3xx Two Bay Hot Plug Wide SCSI Drive Cage(optional) | Up to 1 | B, C | Integrated SCSI or optional array controller |

Hard Drives

Ultra320 Hot Pluggable Drives

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 300GB U320 10K | Up to 8 | 0-7 | Integrated Dual Channel Ultra320 SCSI Adapter |
| 146GB U320 10K | (With optional | | Smart Array 6402/128 Controller |
| 72GB U320 10K | ML3xx Two Bay | | Smart Array 6404/256 Controller |
| 300GB U320 15K | Hot Plug SCSI | | Smart Array 641 Controller |
| 146GB U320 15K | Drive Cage) | | Smart Array 642 Controller |
| 72GB U320 15K | | | |
| 36GB U320 15K | | | |

Serial-ATA (SATA) – Hot Plug Drives

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 60GB 1.5G SATA 5.4K | Up to 8 | 0-7 | Smart Array P600/256 BBWC Controller |

SFF SAS – Hot Plug Drives

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 146GB 3G SAS 10K SP | Up to 8 | 0-7 | Smart Array P600/256 BBWC Controller |
| 72GB 3G SAS 10K SP | | | |
| 36GB 3G SAS 10K SP | | | |

*Storage*

External Storage

| | Quantity Supported | Position Supported | Host Controller or Adapter |
|---|---|---|---|
| Modular Smart Array 20 Family | 1 per external VHDCI SCSI connector | External | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller |
| Modular Smart Array 30 Family | 1 per external VHDCI SCSI connector | External | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller<br>Smart Array 642 Controller |
| Modular Smart Array 50 Enclosure | 1 per external VHDCI SCSI connector | External | Smart Array P600/256 BBWC Controller |
| Modular Smart Array 500 G2 System | 1 | External | Smart Array 642 Controller (used as Host Bus Adapter)<br>Please see the Modular Smart Array 500 G2 QuickSpecs for the latest list of supported HBAs: http://www.hp.com/go/msa500 |
| Modular Smart Array 1000 | Please see the Modular Smart Array 1000 QuickSpecs link below to determine configuration requirements | External | Please see the Modular Smart Array 1000 QuickSpecs (URL below) for the latest list of supported HBAs |
| Modular Smart Array 1500 cs | Please see the Modular Smart Array 1500 cs QuickSpecs link below to determine configuration requirements | External | Please see the Modular Smart Array 1500 cs QuickSpecs (URL below) for the latest list of supported HBAs |

Modular Smart Array 1000: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)
Modular Smart Array 1500 cs: http://www.hp.com/go/MSA1500cs

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/Division/10233.html (Worldwide)

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

NOTE: For complete listing of tape drive offerings see http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

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

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

# QuickSpecs

*Storage*

| | Position Supported | Controller | Controller Part Numbers |
|---|---|---|---|
| **HP StorageWorks Tape Drives, Hot Plug**<br>DAT 40 Hot Plug<br>DAT 72 Hot Plug | 0-5<br>NOTE: SCSI Models only. | Integrated Dual Channel Ultra320 SCSI Adapter<br><br>64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | N/A<br><br>374654-B21 |
| **HP StorageWorks Tape Drives, Internal**<br>DAT 24 USB<br>DAT 40 USB<br>DAT 72 USB | B or C | USB 2.0 Port | N/A |
| **HP StorageWorks Tape Drives, External**<br>DAT 24 USB<br>DAT 40 USB<br>DAT 72 USB | External | USB 2.0 Port | N/A |
| **HP StorageWorks Tape Drives, Internal**<br>Ultrium 232<br>Ultrium 448<br>DAT 40<br>DAT 72<br>DLT VS160 | B or C | USB 2.0 Port | N/A |
| **HP StorageWorks Tape Drives, Internal**<br>Ultrium 460<br>Ultrium 960<br>SDLT 320<br>SDLT 600 | B and C | 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |
| **HP StorageWorks Tape Drives, External**<br>Ultrium 232<br>Ultrium 448<br>Ultrium 460<br>Ultrium 960<br>DAT 40<br>DAT 72<br>DLT VS160<br>SDLT 600 | External | 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |
| **HP StorageWorks Autoloaders, External**<br>DAT 72x10 Autoloader<br>1/8 Tape Autoloader | External | 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |

## Storage

| | | | |
|---|---|---|---|
| **HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures** 1U Rack-Mount Kit 3U Rack-Mount Kit | External | 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |
| **HP StorageWorks USB Rack-Mount Tape Drive Enclosures** 1U Rack-Mount Kit | External | USB 2.0 Port | N/A |
| **HP StorageWorks Tape Libraries, External** MSL2024 (Ultrium 448 and 960-based) MSL4048 (Ultrium 448 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 |

# QuickSpecs

*Power Specifications*

| | |
|---|---|
| Part Number | 367242-001 |
| Spare Kit | 360623-B21 |
| Operational Input Voltage Range (V rms) | 90 to 264 |
| Frequency Range (Nominal) (Hz) | 47 to 63 (50/60) |

| Nominal Input Voltage (Vrms) | 100 | 115 | 208 | 220 | 230 | 240 |
|---|---|---|---|---|---|---|
| Max Rated Output Wattage Rating | 775 | 775 | 775 | 775 | 775 | 775 |
| Nominal Input Current (A rms) | 10.0 | 8.6 | 4.7 | 4.4 | 4.1 | 4.0 |
| Max Rated Input Wattage Rating (Watts) | 981 | 969 | 957 | 945 | 934 | 934 |
| Max. Rated VA (Volt-Amp) | 1001 | 989 | 976 | 964 | 963 | 953 |
| Efficiency (%) | 79 | 80 | 81 | 82 | 83 | 83 |
| Power Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Leakage Current (mA) | 0.43 | 0.50 | 0.65 | 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 |

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/powercalcs.asp.
To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML370 G4
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

| Power Cords (13 Cord Sets) | Power Cord Part Number |
|---|---|
| Country | |
| APD | 139867-006 |
| APD | 100613-003 |
| APD | 100614-003 |
| Australia | 100611-007 |
| Europe | 100614-003 |
| France | 100614-003 |
| Germany | 100614-003 |
| Japan | 139867-006 |
| PRC | 139867-006 |
| PRC | 100613-003 |
| PRC | 100661-007 |
| UK | 100613-003 |
| US | 163719-002 |

*Technical Specifications*

| System Unit - Tower | Dimensions | 18.46 x 8.69 x 28 in (46.88 x 22.07 x 71.12 cm) | |
|---|---|---|---|
| | Weight | 70 lb (31.75 kg) (without hard drives, no RPS) | |
| | Input Requirements | Range Line Voltage | 100-132 VAC, 200-240 VAC |
| | | Rated Input Voltage | 7.5A (100VAC), 3.8A (200VAC) |
| | | Rated Input Frequency | 50 to 60 Hz |
| | | Rated Input Current | 735W |
| | | Rated Input Power | 1001W (100VAC) |
| | BTU Rating | 3,420 BTU/HR | |
| | 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: ML370 G4 - Click on: "Power Calculator" link. (You may need to scroll down to see it) | |
| | SCSI Connectors | Two Internal HD68 connectors (Option kits available for HD68 or VHDCI external connectors) | |
| | Power Supply Output Power | Steady State Power | 775W |
| | | Maximum Peak Power | 775W |
| | Temperature Range | Operating | 41° to 95° F (5° to 35° C) |
| | | Shipping | -40° to 185° F (-40° to 85° C) |
| | Relative Humidity (non-condensing) | Operating | 5% to 95% |
| | | Shipping | 5% to 95% |
| | Acoustic Noise | Idle (Fixed Disk Drives Spinning) | |
| | | $L$ WAd (BELS) | 5.9 |
| | | $L$ pAm (dBA) | 41 |
| | | Operating (Random Seeks to Fixed Disks) | |
| | | $L$ WAd (BELS) | 6.0 |
| | | $L$ pAm (dBA) | 42 |

*Technical Specifications*

| System Unit - Rack | Dimensions | 8.69 x 19.0 x 25.75 in (22.07 x 48.26 x 65.43 cm) | |
|---|---|---|---|
| | Weight | 65 lb (29.48) (without hard drives, no RPS) | |
| | Input Requirements | Range Line Voltage | 90 to 264 VAC |
| | | Rated Input Voltage | 100 to 240 VAC |
| | | Rated Input Frequency | 47 to 63 Hz |
| | | Rated Input Current | 10A (110 V) to 4.8A (220 V) |
| | | Rated Input Power | 1001W (100VAC) |
| | BTU Rating | 3,420 BTU/HR | |
| | SCSI Connectors | Two Internal HD68 connectors (Option kits available for HD68 or VHDCI external connectors) | |
| | Power Supply Output Power | Steady State Power | 775W |
| | | Maximum Peak Power | 775W |
| | Temperature Range | Operating | 41° to 95° F (5° to 35° C) |
| | | Shipping | -40° to 185° F (-40° to 85° C) |
| | Relative Humidity (non-condensing) | Operating | 5% to 95% |
| | | Shipping | 5% to 95% |
| | Maximum Wet Bulb Temperature | 101.7° F (38.7° C) | |
| | Acoustic Noise | Idle (Fixed Disk Drives Spinning) | |
| | | $L$ WAd (BELS) | 5.9 |
| | | $L$ pAm (dBA) | 41 |
| | | Operating (Random Seeks to Fixed Disks) | |
| | | $L$ WAd (BELS) | 6.0 |
| | | $L$ pAm (dBA) | 42 |

| Optional Redundant Power Supply | Input Requirements | Rated Input Voltage | 100 to 240 VAC |
|---|---|---|---|
| | | Rated Input Frequency | 47 to 63 Hz |
| | | Rated Input Current | 10A (110 V) to 4.8A (220 V) |
| | | Rated Input Power | 1001W (100VAC) |
| | BTU Rating | 3,420 BTU/HR | |
| | Power Supply Output Power | Steady State Power | 775W |
| | | Maximum Peak Power | 775W |
| | Temperature Range | Operating | 41° to 95° F (5° to 35° C) |
| | | Shipping | -40° to 185° F (-40° to 85° C) |
| | Relative Humidity (non-condensing) | Operating | 5% to 95% |
| | | Shipping | 5% to 95% |
| | Maximum Wet Bulb Temperature | 101.7° F (38.7° C) | |

## Technical Specifications

| Integrated Dual Channel Ultra320 SCSI Adapter | Drives Supported | Up to 28 SCSI devices (14 per channel) |
|---|---|---|
| | Data Transfer Method | 64-bit PCI bus-master |
| | SCSI Channel Transfer Rate | 320 MB/s per channel |
| | Maximum Transfer Rate per PCI Bus (peak) | 400 MB/s per channel |
| | SCSI Protocols | Wide Ultra2 SCSI<br>Wide-Ultra SCSI-3<br>Ultra320 SCSI |
| | Electrical Protocol | Low Voltage Differential (LVD) |
| | SCSI Termination | Active Termination |
| | External SCSI Connectors | Optional VHDCI and HD68 internal-to-external connectors |
| | Internal SCSI Connectors | Two 68-Pin Wide-Ultra SCSI-3 connectors |

| Smart Array P600 Controller (SAS models only) | Disk Drive and Enclosure Protocol Support | 3 Gbps SAS (Serial Attached SCSI)<br>1.5 Gbps Serial Advanced Technology Attachment (SATA) |
|---|---|---|
| | Architecture | 1.5 Gb SATA |
| | SAS Connectors | 1 internal SFF8484 & 1 external SFF8470 / internal SFF8484 shared x4 Wide SAS Ports<br>12 Gbps per x4 Wide SAS Port (4 x 3 Gbps) |
| | Data Transfer Method | 64-bit wide, PCIX 133 MHz (1 GB/s maximum bandwidth) |
| | PCI Bus Speed | PCIX-133 and 3.3 volt PCI compatibility only |
| | Memory Bus Speed | DDR-266 and 72 bit wide bus |
| | PCI | 64-bit, 133-MHz PCI-X (1 GB/s maximum bandwidth) |
| | Simultaneous Drive Transfer Ports | PCI-X and 3.3 volt PCI compatibility only |
| | Port Transfer Rate | 2 x4 Wide SAS Ports |
| | Software upgradeable Firmware | 12 Gb/s per x4 Wide SAS Port (4 x 3 Gb/s) |
| | Cache Memory | Yes |
| | Logical Drives Supported | 256 MB Read/Write (512-MB module upgrade available);<br>ECC protection, battery-backed, and removable |
| | Maximum Capacity | Up to 32 logical drives<br>Up to 2.2 TB per logical drive |
| | Memory Addressing | 2.7 TB (38 x 72 GB)<br>64-bit, supporting servers memory greater than 4 GB |
| | RAID Support | RAID 6 (Advanced Data Guarding)<br>RAID 5 (Distributed Data Guarding)<br>RAID 1+0 (Striping & Mirroring)<br>RAID 0 (Striping) |
| | Upgradeable Firmware Disk Drive and | 4-MB flashable ROM |
| | Enclosure Protocol Support | 3 Gb SAS and 1.5 Gb SATA |

## Technical Specifications

| Integrated NC7781 PCI-X Gigabit Server Adapter | Network Interface | 10/100/1000-T | |
|---|---|---|---|
| | Compatibility | IEEE 802.3 10Base-T | |
| | | IEEE 802.3ab 1000Base-T | |
| | | IEEE 802.3u 100Base-TX | |
| | Data Transfer Method | 64-bit/133MHz PCI-X | |
| | 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) |
| | | 10/100/1000Base-TX | Category 5 UTP; up to 328 ft (100 m) |

| Integrated Lights-Out (integrated on system board) | Architecture | 32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit) |
|---|---|---|
| | Processor | 32-bit RISC processor core running at 66MHz |
| | Upgradeability | Option firmware upgradeable via flash ROM. |
| | Video Support | Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colors), 800 x 600 (256 to 16.7M colors), 1024 x 768 (256 to 65K colors), 1280 x 1024 (256 colors) |
| | Interfaces | One dedicated Ethernet network connection (10/100 Mb/s) One shared Ethernet network connection via one of the embedded 1Gb/s system network interfaces |
| | Memory | 2-MB Flash ROM 8-MB SDRAM |
| | Operating System Support | Microsoft Windows 2000 Server and Advanced Server, Microsoft Windows Server 2003, Standard Edition, Web Edition, Enterprise Edition, SBS Edition Red Hat AS 2.1 Red Hat Enterprise Linux L 3.0 (10/03) - WS, ES, AS SuSE Linux Enterprise Server 7, United Linux 1.0 SP2 & SP3 (11/03) Novell NetWare 6.0, 6.5 |
| | Client System Support | Windows 2000 and 2000 Professional Windows 2003 Windows 2000 XP Professional Edition Red Hat Advanced Server 2.1, Red Hat Linux V7.2, V7.3, V8.0 SuSE Linux Enterprise Server V7, V8 United Linux 1.0 |
| | Client Browser Support | Microsoft Internet Explorer 6.0 or later. Netscape Navigator 7.1 (on supported Linux client systems) Mozilla 1.5 (for supported Linux client systems) |
| | Command Line support | Telnet, Secure Shell and serial port access |
| | Security | Secure Socket Layer Secure Shell version 2 |
| | Directory Support Services | Active Directory V1.0 (Windows 2000, 2003) |

*Technical Specifications*

| | | |
|---|---|---|
| **Directory Support Services** **Driver Support** | Novell eDirectory V8.6.2, V8.7 (Novell NetWare 5.X, 6.X, Red Hat 7.1, Windows 2000, Windows Server 2003) Health Driver (iLO Advanced Server Management Controller Driver) iLO Management Interface Driver | |
| **iLO Standard Management** | Virtual Text Remote Console Virtual Power Button Control Dedicated & shared LAN Connectivity Browser and command line access Automatic IP Configuration via DHCP/DNS/WINS Industry Standard 128-bit Secure Sockets Layer (SSL) Secure Shell Security IML and iLO Event Logging Support for up to 12 user accounts with customizable access privileges | |
| **iLO Advanced Features** | Virtual Graphical Remote Console Virtual Floppy Drive | |