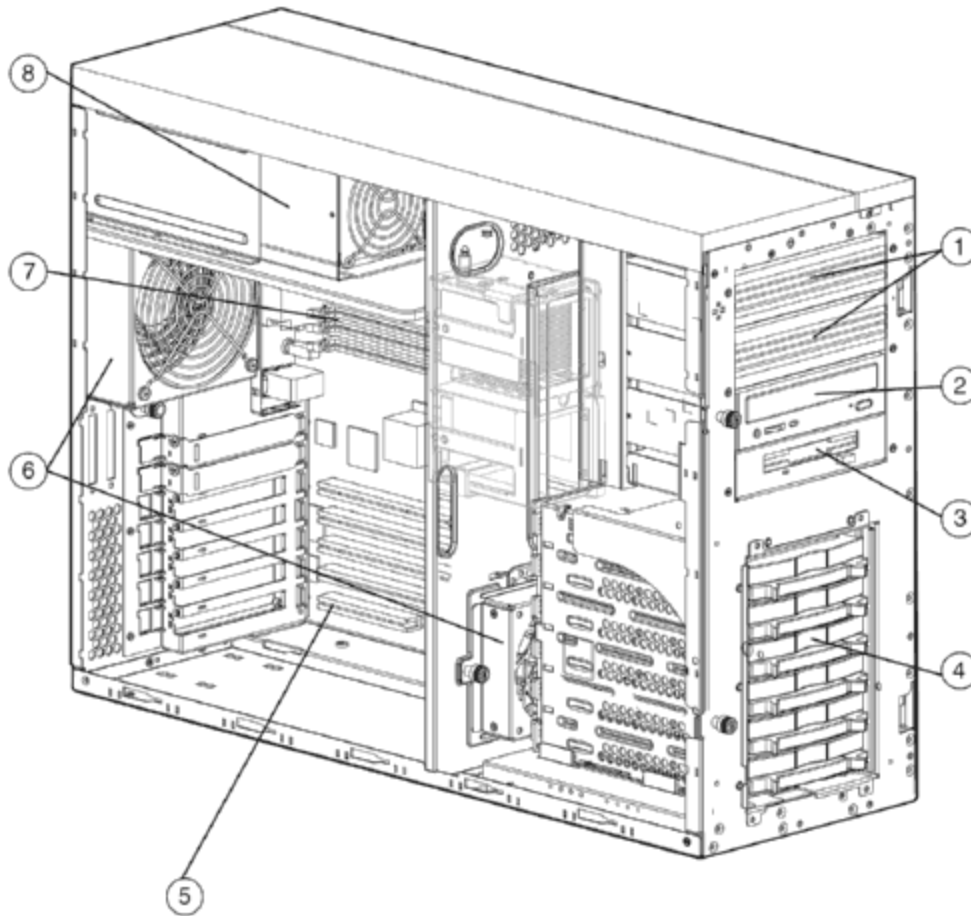


Overview



- 1. Two Removable Media Bays
- 2. 48X Max IDE (ATAPI) CD-ROM Drive
- 3. 1.44 Floppy Drive
- 4. Six 1" Hot Plug Drive Bays
- 5. Five expansion slots (four 64-bit/100-MHz PCI-X, one 32-bit/33-MHz PCI)
- 6. System fan
- 7. Four DIMM sockets for up to 8GB of memory, optionally interleaved
- 8. Optional 2nd Power Supply for hot-pluggable 1+1 redundancy

What's New

- Now available with Intel® Xeon 3.06 GHz processors with 533MHz system bus.

Overview

At A Glance

- The ProLiant ML350 G3 is an expandable rack or tower platform delivering affordable 2-way performance and essential availability to corporate workgroups and growing businesses
- Intel Xeon 2.4 GHz, 2.8 GHz or 3.06GHz processors (dual processor capability) with 512-KB level 2 cache standard (full speed) and Hyper-Threading Technology
- ServerWorks Grand Champion LE Chipset
- Up to 533-MHz Front Side Bus (model dependent)
- Integrated Dual Channel Wide Ultra3 SCSI Adapter
- Smart Array 641 (standard in Array Models only)
- NC7760 PCI Gigabit Server Adapter (embedded)
- Up to 512MB of 2-way interleaving capable PC2100 DDR SDRAM, with Advanced ECC capabilities (Expandable to 8GB):
- Flexible memory configurations allow interleaving (2x1) or non-interleaving
- Five expansion slots: four 64-bit/100-MHz PCI-X, one 32-bit/33-MHz PCI
- Two USB ports
- Standard 6 x 1" Wide Ultra320 ready Hot Plug Drive Cage
- Internal storage capacity of up to 880GB (6 x 146.8 GB 1"), 1.174-TB (2 x 146.8 GB 1" + 6 x 146.8 GB 1") with optional 2-bay hot plug drive cage option
- 500W Hot-Pluggable Power Supply (standard) and an optional 500W Hot-Pluggable Redundant Power Supply (1 + 1) available
- Tool-free entry to chassis and access to components
- ROM based setup utility (RBSU) support and, redundant ROM
- Insight Manager, SmartStart, and Automatic Server Recovery (ASR-2)
- Protected by HP Services, including a three-year, next business day, on-site, limited global warranty and extended Pre-Failure Warranty.

Standard Features

Processor <i>One of the following depending on Model</i>	Intel Xeon Processor 3.06 GHz/533-512KB Intel Xeon Processor 2.8 GHz/533-512KB Intel Xeon Processor 2.4 GHz/400-512KB		
Cache Memory	Integrated 512-KB Level 2 cache (full speed)		
Upgradability	Upgradable to dual processing		
Chipset	ServerWorks Grand Champion LE Chipset with 400-MHz or 533-MHz Front Side Bus (model dependent) NOTE: For more information regarding ServerWorks, please see the following URL: http://www.serverworks.com/products/overview.html		
Memory <i>(One of the following depending on model)</i>	2-way interleaving capable PC2100 DDR SDRAM running at 200MHz on 400MHz models or 266MHz on 533MHz models with Advanced ECC capabilities Standard (Non-Array Models) 256MB Standard (Array Models) 512MB Maximum 8 GB		
Network Controller	NC7760 Gigabit Server Adapter (embedded)		
Expansion Slots	I/O (5 Total, 5 Available) 64-bit/100MHz, PCI 32-bit/33MHz, PCI	4 (4 available) <i>(Array model has 3 available)</i> 1 (1 available)	PCI Voltage: 3.3 Volt or universal cards 5 Volt or universal cards
Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter Smart Array 641 Controller (>2.8 GHz Array Models Only)		
Storage	Diskette Drives CD-ROM Hard Drives Maximum Internal Storage External Storage	1.44 MB 48x IDE (ATAPI) CD-ROM Drive None 1.174 TB GB (6 x 146.8 GB 1" with standard internal hot plug drive cage + (2 x 146.8 GB 1") with optional ML3xx Two Bay Hot Plug SCSI Drive Cage) Two external SCSI knockouts available, optional ProLiant ML350 Internal to External SCSI Cable Option Kit required	<ul style="list-style-type: none"> ● HD68 Internal to External SCSI Cable Option Kit PN 159547-B22 ● VHDCI Internal to External SCSI Cable Option Kit PN 333370-B21

Standard Features

Interfaces	Parallel	1
	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	Network RJ-45	1
	USB	2
	External SCSI knockouts	2

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

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

Form Factor Tower or rack (5U)

NOTE: Rack models (and rack conversion kit) support:

- Square hole racks from 27" - 32" deep (including Compaq/HP 7000, 9000, 10000 and H9 series)
- Square or round hole racks, from 24" - 35" deep (including HP Rack System /E and HP Systems, with an adjustment)
- Telco racks with 3rd part option kit from Rack Solutions

<http://www.racksolutions.com/compaq/products.htm>

Standard Features

ProLiant Essentials Foundation Pack Software

Insight Manager 7 and HP Systems Insight Manager

Insight Manager 7 and HP's new HP Systems Insight Manager help maximize system uptime and performance and reduce system maintenance costs by providing proactive notification of problems before those problems result in unplanned downtime or reduced productivity. Insight Manager 7 and HP Systems Insight Manager are both easy to set up work with the Insight Management Agents, integrated Light-Out and Remote Insight Light-Out Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP Systems Insight Manager customers will also be able to take advantage of role-based security; the ability to manage ProLiant, Integrity, and HP 9000 systems; and plug-ins for storage, client, printer, and power management as well as server rapid deployment, performance management, and workload management. For more details on HP Systems Insight Manager visit <http://www.hp.com/go/hpsim>.

Management Agents

The Management Agents form the foundation for HP's Intelligent Manageability strategy. They provide direct, browser-based access to in-depth instrumentation built into HP servers, workstations, desktops, and portables, and send alerts to Insight Manager 7 and other enterprise management applications in case of subsystem or environmental failures. For additional information about the Management Agents and other management products from HP, please visit the management Web site at <http://www.hp.com/servers/manage>.

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/manage>.
SmartStart version supported (minimum): SmartStart 5.50

ActiveUpdate

ActiveUpdate is a web-based application that keeps IT managers directly connected to HP for proactive notification and delivery of the latest software updates.

ROMPaq, support software, and configuration utilities

The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options.

Survey Utility and diagnostics utilities

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

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 – an automated solution for multi-server deployment and provisioning, enabling companies to quickly and easily adapt to changing business demands.
- Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.
- Performance Management Pack – a performance management solution that identifies and explains hardware performance bottlenecks on ProLiant servers and attached options enabling users to better utilize their valuable resources.

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

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

Industry Standard Compliance

ACPI V1.0B Compliant
PCI 2.2 Compliant
PXE Support
WOL Support
PCI-X 1.0 Compliant
Novell Certified
Microsoft® Logo certifications

Standard Features

Intelligent Manageability	Insight Manager 7 HP Systems Insight Manager Redundant ROM System Firmware Update ROMPaq Remote Insight Lights-Out Edition II (optional) ProLiant RBSU (ROM-Based Setup Utility) Automatic Server Recovery-2 (ASR-2) Drive Parameter Tracking (with Smart Array Controller) Dynamic Sector Repairing (with Smart Array Controller) Pre-Failure Warranty (covers processors, memory and hard drives)
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Security	Power-on password Setup password Diskette boot control Parallel and serial interface control Disk configuration lock Power switch security
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Server Power Cords	Tower models ship standard with country specific, lowline NEMA power cords. Rack models ship standard with an IEC cable. Rack models for some countries also include a NEMA cord. Most redundant power supply options ship with country specific power cords with the exception of the IEC redundant power supply (P/N 283655-B21) which ships with an IEC cable only.
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Power Supply	500 Watts, Power Factor Correction (PFC), Hot Plug 100 to 240 VAC Rated Input Voltage (Auto-sensing), CE Mark Compliant Optional 2nd power supply for hot-pluggable 1 + 1 redundancy.
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System Fans	2 fans ship standard, 2 fans total supported (does not include power supply fans)
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Required Cabling	For required cabling information, refer to the HP Web site at http://www.hp.com/servers/proliantML350 .
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OS Support	Microsoft Windows NT® Server 4.0 and Terminal Server 4.0 Microsoft BackOffice Small Business Server 2000 Microsoft Windows 2000 Server and Advanced Server Windows Server 2003 Novell NetWare 5.1, 6.0 Novell NetWare Small Business Suite 6.0 SCO OpenServer 5.0.6a SCO OpenUnix® 8 SCO UnixWare® 7.1.1 IBM OS/2 Warp Server for e-business LINUX (Red Hat, 2.1 Advanced Server, Red Hat 8.0 and Red Hat 7.3, SuSE, SLES7, UnitedLinux 1.0) NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf . NOTE: Optional hardware may be required to support some operating systems. NOTE: For an up-to-date listing of the latest drivers available for the ProLiant ML350, please see: http://www.compaq.com/support/files/server/us/index.html .
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Standard Features

Rack Airflow Requirements

- Rack 10000 series Cabinets

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
- Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL:

<http://www5.hp.com/servers/proliantml350>.

Installation of Server into Telco Racks

ML350 G3 rack model support: Support for all 2-post Telco racks requires the use of the rack kit and an additional option kit from Rack Solutions. <http://www.racksolutions.com/hp>.

HP Factory Express Capabilities

HP Factory Express gives you the flexibility to choose from a full menu of factory capabilities all in one manufacturing facility, in one process, with one touch giving you full control and access to HP's World class manufacturing facility anytime. This approach provides you the speed to deploy your IT needs, with total quality assurance, reliability, and predictability to lower your total cost of ownership by letting HP install, rack, and customize your software and hardware options for you.

Service and Support

HP Services provides a three-year, limited warranty, including Pre-Failure Warranty (coverage of hard drives, memory and processors) fully supported by a worldwide network of resellers and service providers and lifetime toll-free 7 x 24 hardware technical phone support. In addition, available service offerings include:

NOTE: Limited Warranty includes 3 year Parts, 3 year Labor, 3-year on-site support.

A full range of HP Care Pack packaged hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services
- Availability and recovery services

NOTE: For more information, visit <http://www.hp.com/services/carepack>.

Please see the following URL regarding Warranty Information For Your HP Products:

<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>.

For additional information regarding Worldwide Limited Warranty and Technical Support, please see the following URL:

<ftp://ftp.compaq.com/pub/supportinformation/ejourney/176738.pdf>.

NOTE: Certain restrictions and exclusions apply. Consult the Customer Support Center at 1-800-345-1518 for details.

Models

ML350T03 X3.06-512KB/533, 256MB 333373-xx1	Processor(s)	(1) Intel Xeon Processor 3.06 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	256 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional drive cage & hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

ML350R03 X3.06-512KB/533, 256MB 333374-xx1	Processor(s)	(1) Intel Xeon Processor 3.06 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	256 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional drive cage & hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Rack (5U)

ML350T03 X3.06-512KB/533, 512MB Array 333371-xx1	Processor(s)	(1) Intel Xeon Processor 3.06 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	512 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	RAID Controller	Smart Array 641
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional drive cage & hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Tower (5U)	

ML350R03 X3.06-512KB/533, 512MB Array 333372-xx1	Processor(s)	(1) Intel Xeon Processor 3.06 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	512 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	RAID Controller	Smart Array 641
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional drive cage & hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
Form Factor	Rack (5U)	

Models

ML350T03 X2.8-512KB/533, 256MB 311523-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Form Factor	(1) Intel Xeon Processor 2.8 GHz Processor standard (up to 2 supported) Integrated 512-KB Level 2 cache per processor 256 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum) NC7760 PCI Gigabit Server Adapter (Integrated/Embedded) Integrated Dual Channel Wide Ultra3 SCSI Adapter None ship standard 1.174 TB maximum hot plug (with optional drive cage & hard drives) 48x IDE (ATAPI) CD-ROM Drive Tower (5U)
ML350R03 X2.8-512KB/533, 256MB 311524-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller Hard Drive Internal Storage Optical Drive Form Factor	(1) Xeon 2.8 GHz Processor standard (up to 2 supported) Integrated 512-KB Level 2 cache per processor 256 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum) NC7760 PCI Gigabit Server Adapter (Integrated/Embedded) Integrated Dual Channel Wide Ultra3 SCSI Adapter None ship standard 1.174 TB maximum hot plug (with optional drive cage & hard drives) 48x IDE (ATAPI) CD-ROM Drive Rack (5U)
ML350T03 X2.8-512KB/533, 512MB Array 311525-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller RAID Controller Hard Drive Internal Storage Optical Drive Form Factor	(1) Intel Xeon Processor 2.8 GHz Processor standard (up to 2 supported) Integrated 512-KB Level 2 cache per processor 512 MB Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum) NC7760 PCI Gigabit Server Adapter (Integrated/Embedded) Integrated Dual Channel Wide Ultra3 SCSI Adapter Smart Array 641 None ship standard 1.174 TB maximum hot plug (with optional drive cage & hard drives) 48x IDE (ATAPI) CD-ROM Drive Tower (5U)
ML350R03 X2.8-512KB/533, 512MB Array 311526-xx1	Processor(s) Cache Memory Memory Network Controller Storage Controller RAID Controller Hard Drive Internal Storage Optical Drive Form Factor	(1) Xeon 2.8 GHz Processor standard (up to 2 supported) Integrated 512-KB Level 2 cache per processor 512 MB of Advanced ECC PC2100 DDR SDRAM DIMM (Standard) to 8 GB (Maximum) NC7760 PCI Gigabit Server Adapter (Integrated/Embedded) Integrated Dual Channel Wide Ultra3 SCSI Adapter Smart Array 641 None ship standard 1.174 TB maximum hot plug (with optional hard drive cage) 48x IDE (ATAPI) CD-ROM Drive Rack (5U)

Models

ML350T03 X2.4-512KB/400, 256MB <i>269786-xx1</i>	Processor(s)	(1) Intel Xeon Processor 2.4 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	256 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional hard drive cage)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Tower (5U)

ML350R03 X2.4-512KB/400, 256MB <i>269787-xx1</i>	Processor(s)	(1) Xeon 2.4 GHz Processor standard (up to 2 supported)
	Cache Memory	Integrated 512-KB Level 2 cache per processor
	Memory	256 MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (Standard) to 8 GB (Maximum)
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Wide Ultra3 SCSI Adapter
	Hard Drive	None ship standard
	Internal Storage	1.174 TB maximum hot plug (with optional hard drives & drive cage)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Form Factor	Rack (5U)

Country Code Key

XX=00
 XX=01
 XX=03
 XX=04
 XX=05
 XX=29
 XX=37
 XX=42
 XX=AA

Tower Code Key

U.S. English
 Australia
 UK
 Germany
 France
 Japan
 APD
 Europe
 PRC

Rack Code Key

U.S. English
 N/A
 N/A
 N/A
 N/A
 Japan
 APD
 Europe
 PRC

Options

ProLiant ML350 G3 Unique Options	Hot Plug Redundant Power Supply Option Kit (NA, LA)	283655-001
	Hot Plug Redundant Power Supply Option Kit (AUST)	283655-011
	Hot Plug Redundant Power Supply Option Kit (EURO)	283655-021
	Hot Plug Redundant Power Supply Option Kit (UK)	283655-031
	Hot Plug Redundant Power Supply Option Kit (Japan)	283655-291
	Hot Plug Redundant Power Supply Option Kit (cable)	283655-B21
	NOTE: PN 283655-B21 SKU contains the 2nd power supply with an IEC power cable. Only purchase if connecting to PDU/UPS that supports IEC cables. All other SKUs contain country specific power cables.	
	Intel Xeon 2.80 GHz-512KB Processor Option Kit	314763-B21
	NOTE: The 2.8 GHz processor option kit (PN 314763-B21) supports ProLiant ML350 G3 systems with 533 MHz front side bus only. This kit cannot be used in 400 MHz front side bus systems such as those with 2.4 GHz, 2.2GHz or 2.0 GHz processors.	
	Intel Xeon 2.40 GHz-512KB Processor Option Kit	257913-B21
NOTE: This processor option kit (PN 257913-B21) supports the ProLiant ML350 G3 servers.		
Intel Xeon 2.20 GHz-512KB Processor Option Kit	283702-B21	
NOTE: This processor option kit (PN 283702-B21) supports the ProLiant ML350 G3 servers.		
Intel Xeon 2.0 GHz-512KB Processor Option Kit	283701-B21	
NOTE: This processor option kit (PN 283701-B21) supports the ProLiant ML350 G3 servers.		
ProLiant ML350 G3 Tower to Rack Conversion Kit	290683-B22	
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ProLiant Essentials Value Pack Software	Rapid Deployment Pack, 1 User, V1.x	267196-B21
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 1 User, V1.x (Japan)	267196-291
	NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x	269817-B21
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Rapid Deployment Pack, 10 Users, V1.x (Japan)	269817-291
	NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	
	Flexible Quantity License Kit	302127-B21
License-Only - for use with a Master License Agreement	302128-B21	
ProLiant Essentials Workload Management Pack 2.0 (Featuring Compaq Resource Partitioning Manager version 2.0)	303284-B21	
ProLiant Essentials Performance Management Pack Flexible License	306697-B21	
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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HP NetServer Transition Services	HP NetServer to ProLiant integration and assessment service	304164-002
	NOTE: HP identifies current levels of NetServer support, services, and management. This service helps maximize customer's ability to add ProLiant platforms into their current environment.	
	HP TopTools to Insight Manager 7 installation and startup service	304163-002
NOTE: Provides on-site review, installation and configuration services for Insight Manager 7. HP will also re-create, as closely as possible, the views and reports from the customer's current TopTools configuration. This service assures a smooth transition to the ProLiant Essentials software.		
HP NetServer to ProLiant Essentials Rapid Deployment Pack installation and startup service	304162-002	
NOTE: Install and configure Rapid Deployment Pack in a test environment, then deploy a server image to a maximum of 250 systems in the production environment. This service helps to assure successful system deployment.		

Options

Processors	<p>Intel Xeon 3.06 GHz-512KB Processor Option Kit 257916-B21 NOTE: The 3.06 GHz processor option kit (PN 257916-B21) supports ProLiant ML350 G3 systems with 533 MHz front side bus only. This kit cannot be used in 400 MHz front side bus systems such as those with 2.4 GHz, 2.2 GHz or 2.0 GHz processors.</p> <p>Intel Xeon 2.80 GHz-512KB Processor Option Kit 314763-B21 NOTE: The 2.80 GHz processor option kit (PN 314763-B21) supports ProLiant ML350 G3 systems with 533 MHz front side bus only. This kit cannot be used in 400 MHz front side bus systems such as those with 2.4 GHz, 2.2 GHz or 2.0 GHz processors.</p> <p>Intel Xeon 2.40 GHz-512KB Processor Option Kit 257913-B21 NOTE: This processor option kit supports ProLiant ML350 G3 servers with 400 MHz front side bus only. This kit (PN 257913-B21) cannot be used in 533 MHz front side bus systems such as the 2.8 GHz systems.</p> <p>Intel Xeon 2.20 GHz-512KB Processor Option Kit 283702-B21 NOTE: This processor option kit supports ProLiant ML350 G3 servers with 400 MHz front side bus only. This kit (PN 283702-B21) cannot be used in 533 MHz front side bus systems such as the 2.8 GHz systems.</p> <p>Intel Xeon 2.0 GHz-512KB Processor Option Kit 283701-B21 NOTE: This processor option kit supports ProLiant ML350 G3 servers with 400 MHz front side bus only. This kit (PN 283701-B21) cannot be used in 533 MHz front side bus systems such as the 2.8 GHz systems.</p>
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Memory (DIMMs)	<p>NOTE: The ML350 G3 supports both interleaved and non-interleaved memory configurations. Base models ship standard with one 256MB DIMM or one 512MB DIMM (Array models). For best performance automatically invoke interleaving by populating memory in identical pairs. If 1GB of total memory is desired add three 256MB DIMMs to the base configuration. If 1.5GB of memory is desired add one 256MB DIMM (to pair with the standard DIMM) and two 512MB DIMMs. Interleaving and installation of memory in pairs is not required. Add any combination of memory DIMMs below to operate in non-interleaved mode.</p> <p>NOTE: Each SDRAM Memory kit contains one (1) DIMM.</p> <p>128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB) 287494-B21</p> <p>256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 287495-B21</p> <p>512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 287496-B21</p> <p>1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 287497-B21</p> <p>2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 2048 MB) 301044-B21</p>
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Internal Storage	<p>ML3xx Two Bay Hot Plug 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. It installs in two available removable media bays.</p>
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Optical Drives	<p>CD-RW/DVD-ROM Combo Drive Option Kit 331346-B21 NOTE: The DVD-ROM drive is supported in the CD-ROM bay and in the removable media bay. If placed in the removable media bay, it requires the 2-Device IDE cable (PN 305381-B21).</p>
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Options

Hard Drives

Ultra320 – Universal Hot Plug

146.8-GB 10,000 rpm U320 Universal Hard Drive (1")	286716-B22
72.8-GB 10,000 rpm U320 Universal Hard Drive (1")	286714-B22
36.4-GB 10,000 rpm U320 Universal Hard Drive (1")	286713-B22
72.8-GB 15,000 rpm U320 Universal Hard Drive (1")	286778-B22
36.4-GB 15,000 rpm U320 Universal Hard Drive (1")	286776-B22
18.2-GB 15,000 rpm U320 Universal Hard Drive (1")	286775-B22

NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

NOTE: Please see the Wide Ultra320 Universal Hot Plug QuickSpecs for additional technical information on the hard drives. Support details, please see the following:

http://h18000.www1.hp.com/products/quickspecs/11531_div/11531_div.HTML (Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11531_na/11531_na.HTML (North America)

Options

Storage Controllers	Smart Array 6402/128 Controller	273915-B21
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 641 Controller	291966-B21
	Smart Array 642 Controller	291967-B21
	Smart Array 532 Controller	225338-B21
	Smart Array 532 Controller (Japan)	225338-291
	Smart Array 5302/128 Controller	283552-B21
	Smart Array 5302/128 Controller (Japan)	283552-291
	Smart Array 5304/256 Controller	283551-B21
	Smart Array 5304/256 Controller (Japan)	283551-291
	Ultra3 Channel Expansion Module for Smart Array 5300 Controller	153507-B21
	128-MB Cache Module for Smart Array 5302 Controller	153506-B21
	RAID ADG Upgrade for Smart Array 5302	288601-B21
	256-MB Battery Backed Cache Module	254786-B21
	NOTE: This 256-MB Battery Backed Cache Module supports the Smart Array 5300 series controllers, HP StorageWorks Modular Smart Array 1000 and the HP StorageWorks Modular Smart Array 500.	
	256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21
	NOTE: This 256-MB DDR, Battery-Backed Cache upgrade kit supports the Smart Array 6400 series controller only.	
	Ultra320 Expansion Module for SA-6402	273911-B21
	64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS	284688-B21
	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter	268351-B21
<p>NOTE: Please see the following Controller or SCSI Adapter QuickSpecs for Technical Specifications such as PCI Bus, PCI Peak Data Transfer Rate, SCSI Protocols supported, SCSI Peak Data Transfer Rate, Channels, SCSI Ports, Drives supported, Cache, RAID support, and additional information:</p> <p>http://h18000.www1.hp.com/products/quickspecs/10851_div/10851_div.HTML (Smart Array 532)</p> <p>http://h18000.www1.hp.com/products/quickspecs/10640_div/10640_div.HTML (Smart Array 5300 Series)</p> <p>http://h18000.www1.hp.com/products/quickspecs/11587_div/11587_div.HTML (Smart Array 6400)</p> <p>http://h18000.www1.hp.com/products/quickspecs/11563_div/11563_div.HTML (Smart Array 641)</p> <p>http://h18000.www1.hp.com/products/quickspecs/11563_div/11563_div.HTML (Smart Array 642)</p> <p>http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML (SCSI Adapter)</p> <p>http://h18000.www1.hp.com/products/quickspecs/11555_div/11555_div.HTML (U320 Adapter)</p>		
Wireless HAP Solution	Compaq WL410 Wireless SMB Access Point (US)	191811-001
	Compaq WL410 Wireless SMB Access Point (Australia)	191811-011
	Compaq WL410 Wireless SMB Access Point (Europe)	191811-021
	Compaq WL410 Wireless SMB Access Point (UK)	191811-031
	Compaq WL410 Wireless SMB Access Point (Japan)	191811-291
	Compaq WL410 Wireless SMB Access Point (China)	191811-AA1
	Compaq WL410 Wireless SMB Access Point (Korea)	191811-AD1
	Compaq WL410 Wireless SMB Access Point (S. Africa)	191811-AR1

Options

Communications	NC3123 Fast Ethernet NIC PCI 10/100 WOL and PXE	174830-B21
	NC6136 Gigabit Server Adapter, 64-bit/66MHz, PCI, 1000 SX	203539-B21
	NC6170 Dual Port PCI-X 1000SX Gigabit Server Adapter	313879-B21
	NC6770 PCI-X Gigabit Server Adapter, 1000-SX	244949-B21
	NC7170 Dual Port PCI-X 1000T Gigabit Server Adapter	313881-B21
	NC7770 PCI-X Gigabit server adapter	244948-B21
	NC7771 PCI-X 10/100/1000-T Server Adapter	290563-B21
	Agere/Lucent V.92 Data+Fax Modem	DC131A

NOTE: Any NC31XX, NC61XX, NC71XX or NC77XX NIC can be used for redundancy with the embedded NC7760 Network Controller.

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 (ROW)	227251-371

Security	HP/Atalla AXL600L SSL Accelerator Card for ProLiant Servers	524545-B21
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Monitors	<i>Rackmount Flat Panel Monitors</i>	
	TFT5110R Flat Panel Monitor (Carbon)	281683-B21

NOTE: Monitors larger than 17" ' may be too heavy for use in rack systems.

NOTE: For a complete list of Monitors please view the following URL:

http://h18000.www1.hp.com/products/quickspecs/11538_div/11538_div.HTML

[http://h18004.www1.hp.com/products/monitors/.](http://h18004.www1.hp.com/products/monitors/)

Options

Tape Drives

NOTE: In order to install certain tape drives internally, you may need to remove the rails that come standard on the drives and then re-insert the screws in the mounting holes. Mounting screws are shipped standard with server.

NOTE: External tape devices, including both tape drives and tape arrays/enclosures, can be directly connected to the VHDCI SCSI port located on the back of the server. Use of a SCSI adapter to connect these devices is optional, not required.

Internal, External and Hot Plug DAT 72 Tape Drives

HP StorageWorks DAT 72 Tape Drive for ProLiant, External (Carbon) US	Q1527A
HP StorageWorks DAT 72 Tape Drive for Open Connect, External (Carbon) WW	Q1523A
HP StorageWorks DAT 72 Tape Drive for ProLiant, External (Carbon) Int'l	Q1528A
HP StorageWorks DAT 72 Tape Drive for ProLiant, Internal (Carbon) WW	Q1525A
HP StorageWorks DAT 72 Tape Drive for Open Connect, Internal (Carbon) WW	Q1522A
HP StorageWorks DAT 72 Tape Drive for ProLiant, Internal Hot Plug (Carbon) WW	Q1529A

NOTE: Please see the DAT 72 Tape Drive QuickSpecs for additional options such as adapters, controllers, and media, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://h18000.www1.hp.com/products/quickspecs/11597_div/11597_div.HTML (Worldwide)

http://h18000.www1.hp.com/products/quickspecs/11597_na/11597_na.HTML (North America)

Internal, External and Rackmount DLT Tape Drives

HP StorageWorks DLT 80 Tape Drive, External (Carbon) Japan	146197-293
HP StorageWorks DLT 80 Tape Drive, 3U Rackmount (Single Drive) WW	274332-B21
HP StorageWorks DLT 80 Tape Drive, 3U Rackmount (Two Drives) WW	274335-B21
HP StorageWorks DLT 80 Tape Drive, 5U Rackmount (Four Drives) WW	274337-B21

NOTE: Please see the DLT 80 Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, media, and for an up-to-date listing of the latest O/S Support details, please see the following:

http://h18006.www1.hp.com/products/quickspecs/10658_div/10658_div.HTML (Worldwide)

http://h18006.www1.hp.com/products/quickspecs/10658_na/10658_na.HTML (North America)

Options

Tape Autoloaders

HP StorageWorks 1/8 Autoloader

HP StorageWorks 1/8 Autoloader, Tabletop, Ultrium 230	C9572CB
HP StorageWorks 1/8 Autoloader, Tabletop, DLT VS80	C9264CB
HP StorageWorks 1/8 Autoloader, Rackmount kit	C9268R

NOTE: Required to install the unit in a standard 19-inch rack; includes rails and rackmount instructions.

SSL1016 Tape Autoloader

SSL1016 DLT1 tape autoloader (includes two 8-cartridge magazines and a barcode reader)	330815-B21
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NOTE: Please see the SSL1016 DLT1 tape autoloader Quick Specs for additional information:

http://www5.compaq.com/products/quickspecs/11626_na/11626_na.HTML

(North America)

http://www5.compaq.com/products/quickspecs/11626_div/11626_div.HTML (Worldwide)

SSL1016 SDLT160/320 tape autoloader (includes 2 8-cartridge magazines and a barcode reader)	330816-B21
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NOTE: Please see the SSL1016 SDLT160/320 tape autoloader Quick Specs for additional information:

http://www5.compaq.com/products/quickspecs/10609_na/10609_na.HTML

(North America)

http://www5.compaq.com/products/quickspecs/10609_div/10609_div.HTML (Worldwide)

SSL 1016 SDLT160/320 drive upgrade kit	330818-B21
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NOTE: Please see the SSL1016 SDLT160/320 tape autoloader Quick Specs for additional information:

http://www5.compaq.com/products/quickspecs/10609_na/10609_na.HTML

(North America)

http://www5.compaq.com/products/quickspecs/10609_div/10609_div.HTML (Worldwide)

SSL1016 Ultrium 460 tape autoloader	330821-B21
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NOTE: Please see the SSL1016 Ultrium 460 tape autoloader Quick Specs for additional information:

http://h18006.www1.hp.com/products/quickspecs/11704_na/11704_na.HTML

(North America)

http://h18006.www1.hp.com/products/quickspecs/11704_div/11704_div.HTML (Worldwide)

Tape Libraries

StorageWorks MSL6000 and MSL5000 Departmental Midrange Tape Libraries

MSL6060L1 - LTO Ultrium 1 based mainstream library up to 4 drives and 60 slots

MSL6060, 0 DRV, Ultrium 460, RM Library	331196-B23
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MSL6060, 2 DRV, Ultrium 460, RM Library	331195-B21
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MSL6060, 2 DRV, Ultrium 460, embedded Fibre, RM Library	331196-B22
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MSL6060, 2 DRV, Ultrium 460, LVDS, TT Lib	331195-B21
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NOTE: Please see the StorageWorks MSL6060 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11608_na/11608_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11608_div/11608_div.HTML (Worldwide)

MSL5060L1 - LTO Ultrium 1 based mainstream library up to 4 drives and 60 slots

MSL5060L1, 0 DRV, Ultrium 230, RM Library	301899-B21
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MSL5060L1, 2 DRV, Ultrium 230, RM Library	301899-B22
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MSL5060L1, 2 DRV, Ultrium 230, embedded Fibre, RM Library	301899-B23
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MSL5060, 2 DRV, Ultrium 230, TT Library	301900-B21
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Options

including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11438_na/11438_na.HTML

(North America) http://h18000.www1.hp.com/products/quickspecs/11438_div/11438_div.HTML

(Worldwide)

MSL5052S2 - SDLT160 based mainstream library up to 4 drives and 52 slots

MSL5052S2, 0 DRV, SDLT 160/320, RM Library	255102-B21
MSL5052S2, 2 DRV, SDLT 160/320, RM Library	293474-B21
MSL5052S2, 2 DRV, SDLT 160/320, RM Library with embedded Fibre	293474-B24
MSL5052S2, 2 DRV, SDLT 160/320, TT Library	293476-B22

NOTE: Please see the StorageWorks MSL5052S2 Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11442_na/11442_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11442_div/11442_div.HTML (Worldwide)

MSL6030 - LTO Ultrium 1 based mainstream library up to 4 drives and 60 slots

MSL6030, 0 DRV, RM Library	330731-B21
MSL6030, 1 DRV, LTO Ultrium 460, RM Library	330731-B22
MSL6030, 2 DRV, LTO Ultrium 460, RM Library	330731-B23
MSL6030, 1 DRV, LTO Ultrium 460, embedded Fibre, RM Library	330731-B24
MSL 6030, 2 DRV, LTO Ultrium 460, embedded Fibre, RM Library	330731-B25
MSL6030, 1 DRV, LTO Ultrium 460, LVDS TT Library	330788-B21
MSL6030, 2 DRV, LTO Ultrium 460, LVDS TT Library	330788-B22

NOTE: Please see the StorageWorks MSL6030 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11625_na/11625_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11625_div/11625_div.HTML (Worldwide)

MSL5030L1 - LTO Ultrium 1 mid-range library up to 2 drives and 30 slots

MSL5030L1, 0 DRV, RM Library	301897-B21
MSL5030L1, 1 DRV, LTO Ultrium 230, RM Library	301897-B22
MSL5030L1, 2 DRV, LTO Ultrium 230, RM Library	301897-B23
MSL5030L1, 1 DRV, LTO Ultrium 230, embedded Fibre, RM Library	301897-B24
MSL 5030L1, 2 DRV, LTO Ultrium 230, embedded Fibre, RM Library	301897-B25
MSL5030, 1 DRV, LTO Ultrium 230, TT Library	301898-B21
MSL5030, 2 DRV, LTO Ultrium 230, TT Library	301898-B22

NOTE: Please see the StorageWorks MSL5030 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11439_na/11439_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11439_div/11439_div.HTML (Worldwide)

MSL5026S2 - SDLT160 based mid-range library up to 2 drives and 26 slots

Options

MSL5026S2, 0 DRV, SDLT 160/320, RM Library	293472-B21
MSL5026S2, 1 DRV, SDLT 160/320, RM Library	293472-B22
MSL5026S2, 2 DRV, SDLT 160/320, RM Library	293472-B23
MSL5026S2, 1 DRV, SDLT 160/320, RM Library with embedded Fibre	293472-B24
MSL5026S2, 2 DRV, SDLT 160/320, RM Library with embedded Fibre	293472-B25
MSL5026S2, 1 DRV, SDLT 160/320, TT Library	293473-B21
MSL5026S2, 2 DRV, SDLT 160/320, TT Library	293473-B22

NOTE: Please see the StorageWorks MSL5026SL Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11453_na/11453_na.HTML
(North America)

http://h18000.www1.hp.com/products/quickspecs/11453_div/11453_div.HTML (Worldwide)

MSL5026SL Graphite - SDLT110 based mid-range library up to 2 drives and 26 slots

MSL5026SL, 1 DRV SDLT RM, graphite	302512-B21
MSL5026SL, 2 DRV SDLT RM, graphite	302512-B22
MSL5026SL, 1 DRV SDLT TT Library, graphite	302511-B21
MSL5026SL, 2 DRV SDLT TT Library, graphite	302511-B22

NOTE: Please see the StorageWorks MSL5026SL Graphite Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11440_na/11440_na.HTML
(North America)

http://h18000.www1.hp.com/products/quickspecs/11440_div/11440_div.HTML
(Worldwide)

MSL5026DLX- 40/80GB DLT based mid-range library up to 2 drives and 26 slots

MSL5026DLX, 1 40/80GB DLT, LVD, RM	231891-B21
MSL5026DLX, 2 40/80GB DLT, LVD, RM	231891-B22
MSL5026DLX, 1 40/80GB DLT, LVD, TT Library	231821-B21
MSL5026DLX, 2 40/80GB DLT, LVD, TT Library	231821-B22

NOTE: Please see the StorageWorks MSL5026DLX Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/10860_na/10860_na.HTML
(North America)

http://h18000.www1.hp.com/products/quickspecs/10860_div/10860_div.HTML
(Worldwide)

MSL6000 and MSL5000 Add-on drives & accessories

MSL5000 SDLT 160/320 Upgrade DRV (MSL5052S2 & MSL5026S2 only)	293475-B21
MSL5000 LTO Ultrium 1 Upgrade DRV (MSL5060L1 & MSL5030L1 only)	301901-B21
MSL5000 SDLT 110/220 Upgrade DRV	231823-B22
MSL5000 40/80GB DLT Upgrade DRV	231823-B21
MSL5000 Dual Magazine LTO (2 X 15 slot magazines)	301902-B21
MSL5000 Dual Magazine DLT (2 X 13 slot magazines)	232136-B21
MSL Universal Pass-Through mechanism	304825-B21

Options

MSL Tape Library Rack Mount Kit	304826-B21
MSL5026 Rack Mount Kit, ProLiant Servers	231894-B22
MSL e1200-160 External Fibre Channel	330728-B21
MSL5026, 5U Pass-Through extender (required one for each unit connected to the stack, for third and additional units) - for MSL5026 & MSL5030	231824-B22
MSL5052, 10U Pass-Through Extender (required one for each unit connected to the stack, for third and additional units) - for MSL5052 & MSL5060	231824-B23
MSL6000, Ultrium 460 Drive Upgrade Kit	330729-B21

Magento-Optical Jukeboxes

Midrange Jukebox

StorageWorks Optical 300mx, 2 drive, 32 slot jukebox	C1150M
StorageWorks Optical 600mx, 4 drive, 64 slot jukebox	C1160M
StorageWorks Optical 700mx, 2 drive, 76 slot jukebox	C1170M

Tape Automation

StorageWorks SSL2000 small system library

SSL2020 – AIT50 based library with up to 2 drives and 20 slots

SSL2020 AIT Mini-Library 1 drive, 20 slot Table Top	175195-B21
SSL2020 AIT Mini-Library 2 drive, 20 slot Table Top	175195-B22
SSL2020 AIT Mini-Library 1 drive, 20 slot Rackmount	175196-B21
SSL2020 AIT Mini-Library 2 drive, 20 slot Rackmount	175196-B22
SSL2020 AIT Library Pass Thru with Transport	175312-B21

Add-on drives and accessories

SSL2020 AIT Library Pass Thru Extender	175312-B22
AIT 50GB Drive Add-On LVD Drive for SSL2020 AIT Library	175197-B21
19 Slot Magazine for SSL2020 AIT Library	175198-B21
AIT 50-GB Data Cassette (5 pack)	152841-001
AIT Cleaning Cassette	402374-B21

NOTE: Please see the [SSL2020 Automated AIT Tape Library Solution QuickSpecs](#) for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/10580_na/10580_na.HTML (North America)

http://h18000.www1.hp.com/products/quickspecs/10580_div/10580_div.HTML (Worldwide)

StorageWorks MSL6000 and MSL5000 Departmental tape libraries

MSL6060L1 – Ultrium 460 1 based departmental library up to 4 drives and 60 slots

MSL6060L1, 0 DRV Ultrium 460 RM Library	331196-B23
MSL6060L1, 2 DRV Ultrium 460 RM Library	331195-B21
MSL6060L1, 2 DRV Ultrium 460 TT Library	331196-B21
MSL6060L1FC, 2 DRV Ultrium 460 embedded Fibre RM Library	331196-B22

NOTE: Please see the [StorageWorks MSL6060 LTO Library QuickSpecs](#) for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11608_na/11608_na.HTML (North America)

http://h18000.www1.hp.com/products/quickspecs/11608_div/11608_div.HTML (Worldwide)

Options

StorageWorks MSL6000 and MSL5000 departmental libraries

MSL5060L1 – LTO Ultrium 1 based departmental library up to 4 drives and 60 slots

MSL5060L1, 0 DRV LTO1 RM Library	301899-B21
MSL5060L1, 2 DRV LTO1 RM Library	301899-B22
MSL5060L1, 2 DRV LTO1 TT Library	301900-B21
MSL5060L1FC, 2 DRV LTO1 RM-with integrated FC router	301899-B23

NOTE: Please see the StorageWorks MSL5060 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11438_na/11438_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11438_div/11438_div.HTML (Worldwide)

MSL5052S2 – SDLT160 based departmental library up to 4 drives and 52 slots

MSL5052S2, RM 0 DRV SDLT ALL	255102-B21
MSL5052S2, 2 DRV SDLT2 TT LIB	293476-B21
MSL5052S2, 2 DRV SDLT2 RM LIB	293474-B21
MSL5052S2FC 2 DRV SDLT2 RM- with integrated FC router	293474-B24

NOTE: Please see the StorageWorks MSL5052S2 Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11442_na/11442_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11442_div/11442_div.HTML (Worldwide)

MSL6030 – LTO Ultrium 460 mid-range library up to 2 drives and 30 slots

MSL6030 0-drive, LTO, LVDS, RM	330731-B21
MSL6030 1-drive, LTO Gen2, LVDS, RM	330731-B22
MSL6030 2-drive, LTO Gen2, LVDS, RM	330731-B23
MSL6030 1-drive, LTO Gen2, Fibre, RM	330731-B24
MSL6030 2-drive, LTO Gen2, Fibre, RM	330731-B25
MSL6030 1-drive, LTO Gen2, LVDS, TT	330788-B21
MSL6030 2-drive, LTO Gen2, LVDS, TT	330788-B22

MSL5030L1 – LTO Ultrium 1 mid-range library up to 2 drives and 30 slots

MSL5030L1, 0 DRV LTO1 RM Library	301897-B21
MSL5030L1, 1 DRV LTO1 RM Library	301897-B22
MSL5030L1, 2 DRV LTO1 RM Library	301897-B23
MSL5030L1, 1 DRV LTO1 TT Library	301898-B21
MSL5030L1, 2 DRV LTO1 TT Library	301898-B22
MSL5030L1FC, 1 DRV LTO1 RM- with integrated FC router	301897-B24

NOTE: Please see the StorageWorks MSL5030 LTO Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11439_na/11439_na.HTML

(North America)

http://h18000.www1.hp.com/products/quickspecs/11439_div/11439_div.HTML

(Worldwide)

Options

MSL5026S2 – SDLT160 based mid-range library up to 2 drives and 26 slots

MSL5026S2, 0 DRV SDLT2 RM Library	293472-B21
MSL5026S2, 1 DRV SDLT2 RM Library	293472-B22
MSL5026S2, 2 DRV SDLT2 RM Library	293472-B23
MSL5026S2, 1 DRV SDLT2 TT Library	293473-B21
MSL5026S2, 2 DRV SDLT2 TT Library	293473-B22
MSL5026S2FC, 1 DRV SDLT2 RM- with integrated FC router	293472-B24
MSL5026S2FC, 2 DRV SDLT2 RM- with integrated FC router	293472-B25

NOTE: Please see the StorageWorks MSL5026SL Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11453_na/11453_na.HTML (North America)

http://h18000.www1.hp.com/products/quickspecs/11453_div/11453_div.HTML (Worldwide)

MSL5026SL Graphite – SDLT110 based mid-range library up to 2 drives and 26 slots

MSL5026SL, 1 DRV SDLT TT, graphite	302511-B21
MSL5026SL, 2 DRV SDLT TT, graphite	302511-B22
MSL5026SL, 1 DRV SDLT RM, graphite	302512-B21
MSL5026SL, 2 DRV SDLT RM, graphite	302512-B22

NOTE: Please see the StorageWorks MSL5026SL Graphite Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/11440_na/11440_na.HTML

(North America) http://h18000.www1.hp.com/products/quickspecs/11440_div/11440_div.HTML (Worldwide)

MSL5026DLX– 40/80GB DLT based mid-range library up to 2 drives and 26 slots

MSL5026DLX, 1 40/80GB DLT, LVD, TT	231821-B21
MSL5026DLX, 2 40/80GB DLT, LVD, TT	231821-B22
MSL5026DLX, 1 40/80GB DLT, LVD, RM	231891-B21
MSL5026DLX, 2 40/80GB DLT, LVD, RM	231891-B22

NOTE: Please see the StorageWorks MSL5026DLX Library QuickSpecs for additional information including Upgrade Kits, Accessories, and SCSI Cable Kits and additional options needed for a complete solution at:

http://h18000.www1.hp.com/products/quickspecs/10860_na/10860_na.HTML (North America)

http://h18000.www1.hp.com/products/quickspecs/10860_div/10860_div.HTML (Worldwide)

MSL6000 and MSL5000 Add-on drives & accessories

MSL SDLT 160/320 Upgrade DRV	293475-B21
MSL Ultrium 460 upgrade drive in hot plug canister	330729-B21
MSL5000 SDLT 110/220 Upgrade DRV	231823-B22
MSL5000 40/80GB DLT Upgrade DRV	231823-B21
MSL Dual Magazine DLT (2 X 13 slot magazines)	232136-B21
MSL Universal passthrough mechanism	304825-B21
MSL 5U passthrough extender	231824-B22
MSL 10U passthrough extender	231824-B23
MSL Dual Magazine – Ultrium	301902-B21

Options

HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500	201724-B21
	Modular Smart Array 500 Starter Kit (includes Modular Smart Array 500 and 2 SA-532 Adapters)	351504-B21
	Modular Smart Array 500 High Availability Kit (includes Modular Smart Array 500 controller, 4-port IO Module, Smart Array Multipath Software and 2 SA-532 Adapters)	351281-B21
	Modular Smart Array 500 Controller	218252-B21
	128-MB Cache Module for Smart Array Controller	153506-B21
	NOTE: 128-MB Cache Module for Smart Array Controller (PN 153506-B21) is an upgrade cache module (128 MB Standard) for Modular Smart Array 500 Controller	
	256-MB Battery-Backed Cache Module	254786-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_na/11050_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11050_div/11050_div.HTML (Worldwide)	

Cluster Options	HP Serviceguard for Linux ProLiant Cluster A.11.14 for Red Hat EL 2.1 (2 node license cluster kit) NOTE: Kit includes 2 licenses, documentation and an Ethernet crossover cable.	305199-B22
	HP Serviceguard for Linux ProLiant Cluster A.11.15 for UnitedLinux 1.0 (2 node license cluster kit) NOTE: Kit includes 2 licenses, documentation and an Ethernet crossover cable.	305199-B23
	HP Serviceguard for Linux License A.11.14 for Red Hat EL 2.1 (single license version) NOTE: Kit includes single license version and documentation.	307754-B22
	HP Serviceguard for Linux License A.11.15 for UnitedLinux 1.0 (single license version) 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_na/11518_na.html (North America) http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide)	307754-B23

External Storage – Tower and Rack	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	StorageWorks Enclosure Model 4314T (tower)	190210-001
	StorageWorks Enclosure Model 4314T (tower) (Int'l)	190210-B31
	StorageWorks Enclosure Model 4314T (tower) (Japan)	190210-291
	StorageWorks Enclosure Model 4314R (rack-mountable)	190209-001
	StorageWorks Enclosure Model 4314R (rack-mountable) (Int'l)	190209-B31
	StorageWorks Enclosure Model 4314R (rack-mountable) (Japan)	190209-291
	StorageWorks Enclosure Model 4354R (rack-mountable)	190211-001
	StorageWorks Enclosure Model 4354R (rack-mountable) (Int'l)	190211-B31
	StorageWorks Enclosure Model 4354R (rack-mountable) (Japan)	190211-291
	NOTE: The StorageWorks Enclosure 4300 Family support the Wide Ultra2/Ultra3 1" Hot Plug Hard Drives.	
	Redundant Power Supply Option	338296-B21
	Ultra3 Single Bus I/O Module Option	190212-B21
	Ultra3 Dual Bus I/O Module Option	190213-B21
	Ultra320 Dual Bus I/O Module for Modular Smart Array 30	287483-B21
	Ultra320 Single Bus I/O Module for Modular Smart Array 30	287484-B21
StorageWorks Enclosure Tower to Rack Conversion Kit	150213-B21	

Options

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000	201723-B22
	Modular Smart Array 1000 Controller	218231-B22
	Modular Smart Array Fibre Channel I/O Module	218960-B21
	Modular Smart Array 1000 Fibre Channel Adapter (FCA) 2101	245299-B21
	Modular Smart Array hub 2/3	286763-B21
<p>NOTE: Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)</p>		
Network Storage Router	M2402 2FCX 4SCSI LVD Network Storage Router	262653-B21
	M2402 2FCX 4SCSI HVD Network Storage Router	262654-B21
	M2402 4 channel LVD SCSI Module	262659-B21
	M2402 4 channel HVD SCSI Module	262660-B21
	M2402 2 channel FC Module	262661-B21
StorageWorks Options	StorageWorks Fibre Channel SAN Switches 8-EL	176219-B21
	StorageWorks SAN Switch 2/8-EL	258707-B21
	StorageWorks SAN Switch 2/16-EL	283056-B21
	StorageWorks SAN Switch 2/8-EL Upgrade Kit	288162-B21
UPS and PDU Power Cord Matrix	<p>Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.</p>	
Uninterruptible Power Systems – Tower UPSs	HP UPS Model T700 (700VA, 500 Watt), Low Voltage (NA)	204015-001
	HP UPS Model T700 (700VA, 500 Watt), High Voltage (Int'l)	204015-B31
	HP UPS Model T700 (700VA, 500 Watt), Low Voltage (Japan)	204015-291
	HP UPS T1000 XR (1000 VA, 700 Watts), Low Voltage (NA)	204155-001
	HP UPS T1000 XR (1000 VA, 700 Watts), High Voltage (Int'l)	204155-B31
	HP UPS T1000 XR (1000VA, 700Watts) 100 VAC (JPN)	312803-291
	HP UPS T1500 XR (1440 VA, 1050 Watts) (NA)	204155-002
	HP UPS T1500 XR (1500 VA, 1050 Watts) (Int'l)	204155-B32
	HP UPS T1500 XR (1500 VA, 1050 Watts) (Japan)	204155-292
	HP UPS T2200 XR (1920 VA, 1600 Watts) Low Voltage (NA)	204451-001
	HP UPS T2200 XR (2200 VA, 1600 Watts) High Voltage (NA)	204451-002
	HP UPS T2200 XR (2200 VA, 1600 Watts) (Int'l)	204451-B31
	HP UPS T2200 XR (2200 VA, 1600 Watts) (Japan)	204451-291

Options

Uninterruptible Power Systems – HP Rack UPSs	HP UPS R1500 XR (100 to 127) (NA)	204404-001
	HP UPS R1500 XR (208 to 480) (Int'l)	204404-B31
	HP UPS R1500 XR (100 to 127) (Japan)	204404-291
	HP UPS R3000 XR (120V) (NA)	192186-001
	HP UPS R3000 XR (208V) (NA)	192186-002
	HP UPS R3000 XR (100V) (Japan)	192186-291
	HP UPS R3000 XR (208V) (Japan) HP UPS R3000 XR (200V) (Japan)	192186-292
	HP UPS R3000 XR (230V) (Int'l - detachable cord)	192186-B31
	HP UPS R3000 XR (230V) (1.6A IEC309 Plug)	192186-B32
	HP UPS R3000 XR (230V) (1.6A CEE 7/7 SCHUKO Plug)	192186-B33
	HP UPS R3000 XR (230V) (1.6A BS-546 Plug)	192186-AR1
	Rack-Mountable UPS R6000 (208V) (NA)	347207-001
	NOTE: UPS R6000 has a hardwired input; and the UPS R12000 XR has a hardwired input and output connection.	
	Rack-Mountable UPS R6000 (230V) (Int'l)	347207-B31
	NOTE: The UPS R6000 has a hardwired input.	
	Rack-Mountable UPS R6000 (200V) (Japan)	347207-291
	NOTE: The UPS R6000 has a hardwired input.	
	HP UPS R12000 XR N+ x (200-240V) (WW-hardwired)	207552-B22
	NOTE: The UPS R12000 XR has a hardwired input and output.	
	NOTE: HP UPS R6000 has a hardwired input; the UPS R12000 XR has a hardwired input and output connection.	

UPS Options	SNMP Serial Port Card	192189-B21
	NOTE: Supports tower and rack UPS XR models ranging from 1000 – 3000VA	
	Six Port Card	192185-B21
	NOTE: Supports tower and rack UPS XR models ranging from 1000 – 3000VA.	
	High to Low Voltage Transformer (250VA)	388643-B21
	NOTE: Supports R6000 UPS series only. 2.5A @ 125 Volts max output across two NEMA 5-15.	
	Extended Runtime Module, T1000 XR	218967-B21
	Extended Runtime Module, T1500 XR/T2200 XR	218969-B21
	Extended Runtime Module, R1500 XR	218971-B21
	NOTE: 2U each, two ERM maximum.	
	Extended Runtime Module, R3000 XR	192188-B21
	NOTE: 2U each, one ERM maximum.	
	Extended Runtime Module, R6000	347224-B21
	NOTE: 3U each, two ERM maximum.	
	Extended Runtime Module, R12000 XR, 4U each, two ERMs maximum	217800-B21
	R12000 XR BackPlate Receptacle Kit, (2) L6-30R (NA)	325361-001
	NOTE: The R12000 XR BackPlate Kit has a hardwired input.	
	R12000 XR BackPlate Receptacle Kit, (2) IEC-309R (WW)	325361-B21
	NOTE: The R12000 XR BackPlate Kit has a hardwired input.	
	SNMP-EN Adapter	347225-B21
NOTE: Supports R6000 UPS series only.		
Multi-Server UPS Card	123508-B21	
NOTE: Supports R6000 UPS series only.		
Scalable UPS Card	123509-B21	
NOTE: Supports R6000 UPS series only.		

Options

<p>Modular PDUs 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).</p>	<p>HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan) 252663-D71 NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.</p> <p>HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan) 252663-D72</p> <p>HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l) 252663-B31</p> <p>HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW) 252663-B21 NOTE: This mPDU (252663-B21), 40A model has a hardwired input.</p> <p>HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW) 252663-B24 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 and R6000 For North America, need to order cable PN 340653-001. NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_na/11041_na.HTML (North America) http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.HTML (Worldwide)</p>
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<p>PDU Options</p>	<p>Third Party Modular PDU Modular Kit 310777-B21 NOTE: This kit allows you to mount the Modular PDUs in (1U configuration only) in racks other than the 9000/10000 Series racks (any racks using the standard 19" rail, including the 7000 Series racks). For more details please refer the Modular PDU QuickSpecs.</p> <p>4.5' IEC C 13 to IEC C14 PDU Jumper Cable (1 per pack) 142257-006</p> <p>4.5' IEC C 13 to IEC C14 PDU Jumper Cable (15 per pack) 142257-007</p>
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<p>USB Options</p>	<p>USB 1.44-MB External Diskette Drive (Carbonite) DC141B</p> <p>USB Optical Scroll Mouse (Carbonite) DD441B</p> <p>USB Easy Access Keyboard (Carbonite/Silver) DC168B#</p>
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USB Easy Access Keyboard (Carbonite/Silver) Country Key Code

Dash #	Description	Dash #	Description
A2M	ICELAND	ABT	HE
AB0	TAWA	ABU	UK
AB1	KOR	ABV	ARA
AB2	PRC	ABX	FIN
AB6	FRA	ABY	DEN
AB7	GRK	ABZ	ITL
AB8	TURK	AC0	BEL
AB9	PORT	AC4	BRZ
ABA	US	ACB	RUSS
ABB	EURO	AKB	CZE
ABC	FCAN	AKC	HUNG
ABD	GR	AKD	POL
ABE	SP	AKL	THAI
ABF	FR	AKN	BHCSY
ABH	NL	AKR	SLOV
ABJ	Japan	ARK	ICELAND
ABM	LA	B15	KAZ
ABN	NOR	UUZ	SWISS
ABS	SW		

Options

Other	ProLiant ML330/ML350 Internal to External SCSI Cable Option Kit (HD68)	159547-B22	
	ProLiant ML330/ML350 Internal to External SCSI Cable Option Kit (VHDCI)	333370-B21	
	NOTE: The ProLiant ML330/ML350 Internal to External SCSI Cable Option Kits (PN 159547-B21 and 333370-B21) are supported by the ML330/ML350 Family.		
	NOTE: For a complete list of keyboards and mice please view the following URL: http://h30143.www3.hp.com/options.cfm?oid=89301&from=enter.cfm&param=oid&val=89301#m_11 .		
Rack Builder	Please see the Rack Builder for configuration assistance at http://www.compaq.com/rackbuilder/ .		
Rack Conversion Kit	ProLiant ML350 Generation 3 Tower to Rack Conversion Kit (HP branded)	290683-B22	
HP Rack 10000 Series (Graphite Metallic)	HP S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22	
	HP 10842 (42U) Rack Cabinet - Pallet	257415-B21	
	HP 10842 (42U) Rack Cabinet - Shock Pallet	257415-B22	
	HP 10647 (47U) Rack Cabinet - Pallet	245160-B21	
	HP 10647 (47U) Rack Cabinet - Crated	245160-B23	
	HP 10642 (42U) Rack Cabinet - Pallet	245161-B21	
	HP 10642 (42U) Rack Cabinet - Shock Pallet	245161-B22	
	HP 10642 (42U) Rack Cabinet - Crated	245161-B23	
	HP 10636 (36U) Rack Cabinet - Pallet	245162-B21	
	HP 10636 (36U) Rack Cabinet - Shock Pallet	245162-B22	
	HP 10636 (36U) Rack Cabinet - Crated	245162-B23	
	HP 10622 (22U) Rack Cabinet - Pallet	245163-B21	
	HP 10622 (22U) Rack Cabinet - Shock Pallet	245163-B22	
	HP 10622 (22U) Rack Cabinet - Crated	245163-B23	
		NOTE: -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)	
		-B23 (crated) used for air shipments of empty racks	
	NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all Compaq equipment is qualified to be shipped in the Rack 10000 series.		
	NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_div/10995_div.HTML (Worldwide) http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML (North America)		
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html .		
Rack Options for HP Rack 10000 Series	Rack Blanking Panels – Graphite (Multi)	253214-B26	
	NOTE: Contains one each of 1U, 2U, 4U and 8U.		
	Rack Blanking Panels – Graphite (1U)	253214-B21	
	NOTE: The Rack Blanking Panels (PN 253214-B21) contains 10 each of (1U).		
	Rack Blanking Panels – Graphite (2U)	253214-B22	
	NOTE: The Rack Blanking Panels (PN 253214-B21) contains 10 each of (2U).		
Rack Blanking Panels – Graphite (3U)	253214-B23		
NOTE: The Rack Blanking Panels (PN 253214-B21) contains 10 each of (3U).			
Rack Blanking Panels – Graphite (4U)	253214-B24		

Options

NOTE: The Rack Blanking Panels (PN 253214-B21) contains 10 each of (4U).	
Rack Blanking Panels – Graphite (5U)	253214-B25
NOTE: The Rack Blanking Panels (PN 253214-B21) contains 10 each of (5U).	
800mm Wide Stabilizer Kit (Graphite)	255488-B21
NOTE: Supported by the Rack 10842 cabinet only.	
600mm Stabilizer Kit – Graphite	246107-B21
Baying Kit for Rack 10000 series (Carbon)	248929-B21
42U Side Panel – Graphite Metallic	246099-B21
110V Fan Kit (Graphite)	257413-B21
NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 5-15P.	
220V Fan Kit (Graphite)	257414-B21
NOTE: Roof Mount Includes power cord with IEC320-C13 to Nema 6-15P.	
36U Side Panel – Graphite Metallic	246102-B21
47U Side Panel – Graphite Metallic	255486-B21
9000/10000 Series Offset Baying Kit (42U)	248931-B21
NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.	
NOTE: For additional information regarding Rack Options, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html .	
Ballast Option Kit	120672-B21
9000/10000 Series Offset Baying Kit (42U)	248931-B21
NOTE: This kit can be used to connect 9000 and 10000 series racks of the same U height together. Kit contents include hardware for connecting racks and a panel to cover the 100mm gap at the rear of the two racks.	
NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html	
Rack Rail Adapter Kit (25" depth)	120675-B21
100 kg Sliding Shelf	234672-B21
Monitor/Utility Shelf - Graphite	253449-B21
Depth Adjustable Fixed Rail	332558-B21
Cable Management D-Rings Kit	168233-B21
Console Management Controller (CMC) Option Kit	203039-B21
Console Management Controller (CMC) Sensors Option Kit	203039-B22
Console Management Controller (CMC) Locking Option Kit	203039-B23
Console Management Controller (CMC) Smoke Sensors Option Kit	203039-B24
KVM USB Interface Adapter	336047-B21
Server Console Switch 1 x 4 port (100-230 VAC)	400336-001
Server Console Switch, 0 x 1 x 8 port	336044-B21
Server Console Switch, 0 x 2 x 16 port	336045-B21
Server Console Switch 1 x 4 port (100-230 VAC) (Int'l)	400336-B31
Server Console Switch 1 x 4 port (100-230 VAC) (Japan)	400336-291
IP Console Switch Box, 1 x 1 x 16	262585-B21
IP Console Switch Box, 3 x 1 x 16	262586-B21
IP Console Interface Adapter, 8 pack	262587-B21
IP Console Interface Adapter, 1 pack	262588-B21
IP Console Expansion Module	262589-B21
CPU to Server Console Cable, 12'	110936-B21
CPU to Server Console Cable, 3'	110936-B24
CPU to Server Console Cable, 7'	110936-B25

Options

IP CAT5 Cable 3', 4 pack	263474-B21
IP CAT5 Cable 6', 8 pack	263474-B22
IP CAT5 Cable 12', 8 pack	263474-B23
IP CAT5 Cable 20', 4 pack	263474-B24
IP CAT5 Cable 40', 1 pack	263474-B25
Switch Box Connector Kit (115V)	144007-001
Switch Box Connector Kit (230V)	144007-002
Switch Box Connector Kit (high voltage) (Int'l)	144007-B33
TFT5600 Rack Keyboard Monitor	221546-xx1

Country Code Key (for TFT5600 RKM Rack Keyboard Monitor (PN 221546-xx1))

XX = 001	US	XX = 091	Norway
XX = 031	UK	XX = 101	Sweden/Finland
XX = 041	Germany	XX = 111	Switzerland
XX = 051	France	XX = 131	Portugal
XX = 061	Italy	XX = 181	Belgium
XX = 071	Spain	XX = 291	Japan
XX = 081	Denmark	XX = B31	International

Local Access Cable Kit	232985-B21
1U Rack Keyboard & Drawer (Carbon)	257054-xx1

NOTE: The 1U Rack Keyboard & Drawer (PN 257054-xx1) is to be used with the Keyboards for Racks with Trackball (PN 158649-xxx).

Country Code Key (for 1U Rack Keyboard & Drawer (PN 257054-xx1))

XX = 001	US	XX = 091	Norway
XX = 031	UK	XX = 101	Sweden/Finland
XX = 041	Germany	XX = 111	Switzerland
XX = 051	France	XX = 131	Portugal
XX = 061	Italy	XX = 181	Belgium
XX = 071	Spain	XX = 291	Japan
XX = 081	Denmark	XX = B31	International

Input Device Adjustable Rails	287139-B21
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NOTE: Input Device Adjustable Rails (287139-B21) are for use with the TFT5110R, TFT5600RKM and integrated keyboard/drawer which is used in mounting into third party racks.

Input Device Telco Rail	287138-B21
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NOTE: Input Device Adjustable Rails (287138-B21) are for use ONLY with the TFT5110R, TFT5600RKM and integrated keyboard/drawer which is used in mounting into third party racks.

Keyboard/Monitor/Mouse extension cables	169989-001
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NOTE: For additional information regarding Rack Options, please see the following URL:
<http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html>.

Options

HP Factory Express

Factory Installation, Racking, and Customization Services

Factory Express Server Configuration Level 1 293355-888

NOTE: Free Installation of HP Options - Installation of HP Options memory, NICs, hard drives, controllers, processors, I/O cards, pre-install standard OEM OS image, and tape drives. Installation fees will apply to all non-HP certified hardware and asset tags.

Factory Express Server Configuration Level 2 266326-888

NOTE: Includes Level 1 Customer Intent of a ProLiant server and options configuration, OS installation, custom image download, IP addressing, network setting, and custom packaging. Customer unique requirements (quick restore creation, cd duplication, test reports, real-time reporting of server MAC address, password, and RILOE). Customer access, validation and control through VPN (price/server).

Factory Express Rack Integration Level 3 with 1 - 3 servers or storage enclosures 325736-888

Factory Express Rack Integration Level 3 with 4 - 9 servers or storage enclosures 232539-888

Factory Express Rack Integration Level 3 with 10 or more servers or storage enclosures 325735-888

NOTE: Includes Level 1 Customer Intent for standard mounted servers and storage units plus standard cable mgmt, RAID configuration, servers & storage, power distribution, networking gear and accessories (price/rack).

NOTE: Available on ProLiant rack models only.

Factory Express Rack Integration Level 4 with 1 - 3 servers or storage enclosures 325734-888

Factory Express Rack Integration Level 4 with 4 - 9 servers or storage enclosures 232540-888

Factory Express Rack Integration Level 4 with 10 or more servers or storage enclosures 325733-888

NOTE: Includes Level 2 Customer Intent plus customer defined cable management and naming convention, customer furnished image download, IP addressing, cluster configurations (SQL, External storage RAID). Quick restore creation, cd duplication, test reports, real-time reporting of server MAC address, password, RILOE). Customer access and validation through VPN (price/rack).

NOTE: Available on ProLiant rack models only.

Factory Express Rack Integration Level 5 with 1 - 3 servers or storage enclosures 325732-888

Factory Express Rack Integration Level 5 with 4 - 9 servers or storage enclosures 232541-888

Factory Express Rack Integration Level 5 with 10 or more servers or storage enclosures 325731-888

NOTE: Includes Level 4 Customer Intent plus Custom SW layering and extended test, Customer access, validation and control through VPN, Clustered racks with networking gear and / or external storage array, Start-up installation services custom quote. (price/rack).

NOTE: Available on ProLiant rack models only.

NOTE: Factory Express Engineered Solution Level 6 is a custom solutions available through Factory Express. Please contact your local reseller or Account Manager.

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 (Canadian Part Number) FP-EL3EC-36

4-Hour On-site Service, 5-Day x 13-Hour, 3 Years (U.S. Part Number) 331045-002

4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years (AP/EMEA Part Numbers) U4512A
U4512E

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years (Canadian Part Number) FP-EL7EC-36

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number) 162675-002

4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years (AP/EMEA Part Numbers) U4513A
U4513E

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years (Canadian Part Number) FP-ELCEC-36

6-Hour Call to Repair, On-site Service 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number) 331046-002

6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years (AP/EMEA Part Numbers) U4514A
U4514E

Options

Installation & Start-up Services

Hardware Installation (Canadian Part Number)	FP-ELINS-EC
Hardware Installation (U.S. Part Number)	401791-002
Hardware Installation (AP/EMEA Part Numbers)	U4522A U4522E
Installation & Start-Up of a ProLiant server and Microsoft O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays. (U.S. Part Number)	240013-002
Installation & Start-Up of a ProLiant server and Microsoft O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays. (Canadian Part Number)	FM-MSTEC-01
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. (AP/EMEA Part Numbers)	U4523A U4523E
Installation & Start-Up of a ProLiant server and 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. (U.S. Part Number)	331051-002
Installation & Start-Up of a ProLiant server and 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. (Canadian Part Number)	FM-LSTEC-01

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. (U.S. Part Number)	239928-002
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. (Canadian Part Number)	FM-M01E1-36
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. (AP/EMEA Part Numbers)	U4524A U4524E
Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays. (U.S. Part Number)	331049-002
Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays. (Canadian Part Number)	FM-L01E1-36
Onsite HW support, 8am-9pm, M-F, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays. (AP/EMEA Part Numbers)	U4526A U4526E

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. (U.S. Part Number)	239930-002
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. (Canadian Part Number)	FM-M02E1-36
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. (AP/EMEA Part Numbers)	U4525A U4525E
Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays. (U.S. Part Number)	331050-002
Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays. (Canadian Part Number)	FM-L02E1-36
Onsite HW support 24x7, 4hr response and Linux O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays. (AP/EMEA Part Numbers)	U4527A U4527E

Options

HP Care Pack Priority Services for ProLiant Servers – Priority Silver

24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Technical Account Manager, Technical Newsletter, SW activity review, proactive patch notification, 1 System Healthcheck per year (2-5-2 Part Number for Canada)	FM-M04E1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System (2-5-2 Part Number for Canada)	FM-M24E1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Novell NetWare Operating System, Technical Account Manager, Technical Newsletter, SW activity review (2-5-2 Part Number for Canada)	FM-N04E1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Novell NetWare Operating System (2-5-2 Part Number for Canada)	FM-N24E1-36
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Technical Account Manager, Technical Newsletter, SW activity review, proactive patch notification, 1 System Healthcheck per year (6-3 Part Number for U.S.)	239932-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System (6-3 Part Number for U.S.)	239934-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Software Support, 1-hr response, Monday – Friday, 8AM – 5PM local time, 2-hr response after hours for Novell NetWare Operating System, Technical Account Manager, Technical Newsletter, SW activity review (6-3 Part Number for U.S.)	239972-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Novell NetWare Operating System (6-3 Part Number for U.S.)	239974-002

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

Memory

HP ProLiant ML350 G3 Array Models

The ML350 G3 supports both interleaved and non-interleaved memory configurations. Array models ship standard with one 512MB DIMM, non-interleaved. For best performance automatically invoke interleaving by populating memory in identical pairs. Interleaving memory and installing in pairs is not required. Add any combination of memory DIMMs to operate in non-interleaved mode.

Standard Memory

512MB (expandable to 8GB) of 2-way interleaving capable PC2100 DDR SDRAM running at 200MHz on 400MHz models or 266MHz on 533MHz models, with Advanced ECC capabilities (1x 512MB)

NOTE: Advanced ECC Memory - ECC protection provides the ability to detect and correct single bit memory errors while Advanced ECC extends this coverage to include protection against multiple simultaneous errors on a DIMM. Advanced ECC detects and corrects 4bit memory errors that occur within a single DRAM chip on a DIMM. Advanced ECC algorithms work in combination with industry standard ECC DIMMS.

Standard Memory Plus Optional Memory

Up to 6.7 GB of total memory can be implemented with the installation of three optional PC2100-MHz Registered ECC DDR SDRAM DIMMs.

Standard Memory Replaced with Optional Memory

Up to 8.2 GB of total memory can be implemented with the removal of the standard 512-MB DIMM and the optional installation of PC2100-MHz Registered ECC DDR SDRAM DIMMs.

NOTE: Charts do not represent all possible memory configurations.

		Slot 1	Slot 2	Slot 3	Slot 4
Standard	512 MB	512 MB	Empty	Empty	Empty
Optional	6656 MB	512 MB	2048 MB	2048 MB	2048 MB
Maximum	8192 MB	2048 MB	2048 MB	2048 MB	2048 MB
2x1 Interleaved Memory (Recommended)		Pair 1		Pair 2	
	Total Memory	Slot 1	Slot 2	Slot 3	Slot 4
Recommended Configurations for Array Models	1 GB	512 MB	512 MB	Empty	Empty
	1.5 GB	512 MB	512 MB	256 MB	256 MB
	2 GB	512 MB	512 MB	512 MB	512 MB

Following are memory options available from HP:

- 128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB) 287494-B21
- 256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 287495-B21
- 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 287496-B21

NOTE: To invoke interleaving in your array model, order this kit for a total of 1-GB of interleaved memory.

- 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 287497-B21
- 2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 2048 MB) 301044-B21

Memory

HP ProLiant ML350 G3 Non-Array Models

The ML350 G3 supports both interleaved and non-interleaved memory configurations. Base models ship standard with one 256MB DIMM, non-interleaved. For best performance automatically invoke interleaving by populating memory in identical pairs. Interleaving memory and installing in pairs is not required. Add any combination of memory DIMMs to operate in non-interleaved mode.

Standard Memory

256MB (expandable to 8GB) of 2-way interleaving capable PC2100 DDR SDRAM running at 200MHz on 400MHz models or 266MHz on 533MHz models with Advanced ECC capabilities (1x 256MB)

NOTE: Advanced ECC Memory - ECC protection provides the ability to detect and correct single bit memory errors while Advanced ECC extends this coverage to include protection against multiple simultaneous errors on a DIMM. Advanced ECC detects and corrects 4bit memory errors that occur within a single DRAM chip on a DIMM. Advanced ECC algorithms work in combination with industry standard ECC DIMMS.

Standard Memory Plus Optional Memory

Up to 6.4 GB optional memory is available with the installation of PC2100-MHz Registered ECC DDR SDRAM DIMMs.

Standard Memory Replaced with Optional Memory

Up to 8.2 GB of memory is available with the removal of the standard 256-MB of memory and the optional installation of PC2100-MHz Registered ECC DDR SDRAM DIMM installed.

NOTE: Charts do not represent all possible memory configurations

Memory		Slot 1	Slot 2	Slot 3	Slot 4
Standard	256 MB	256 MB	Empty	Empty	Empty
Optional	6400 MB	256 MB	2048 MB	2048 MB	2048 MB
Maximum	8192 MB	2048 MB	2048 MB	2048 MB	2048 MB
Recommended Configurations for Base Models	Total Memory Desired	1	2	3	4
	512 MB	256 MB	256 MB	Empty	Empty
	1 GB	256 MB	256 MB	256 MB	256 MB
	1.5 GB	256 MB	256 MB	512 MB	512 MB
Recommended Configurations for Array models	Total Memory Desired	1	2	3	4
	1 GB	512 MB	512 MB	Empty	Empty
	1.5 GB	512 MB	512 MB	256 MB	256 MB
	2 GB	512 MB	512 MB	512 MB	512 MB

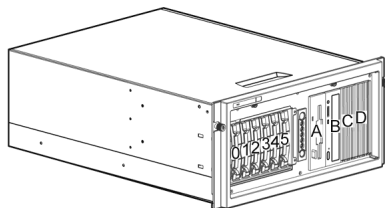
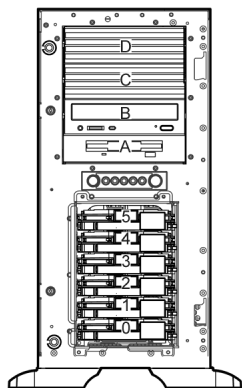
Following are memory options available from HP:

- 128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB) 287494-B21
- 256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB) 287495-B21

NOTE: To invoke interleaving in your base model, order this kit for a total of 512MB of interleaved memory.

- 512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 287496-B21
- 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 287497-B21
- 2048MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 2048 MB) 301044-B21

Storage



- 0 - 5 6 x 1 in SCSI Hard Drive Bays
- A 3.5 in Diskette Drive
- B 48x CD-ROM
- C, D Available half height bay

Drive Support

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

Storage

Hard Drives

Ultra320 Hot Pluggable Drives

	Quantity Supported	Position Supported	Controller
1-inch	Up to 6	0-5	Integrated Dual Channel Wide Ultra3 SCSI Adapter
146.8-GB 10,000 rpm			Smart Array 532 Controller
72.8-GB 10,000 rpm			Smart Array 5302/128 Controller
36.4-GB 10,000 rpm			Smart Array 5304/256 Controller
72.8-GB 15,000 rpm			Smart Array 6402/128 Controller
36.4-GB 15,000 rpm			Smart Array 6404/256 Controller
18.2-GB 15,000 rpm			Smart Array 641 Controller
			(NOTE: The Smart Array 641 Controller now ships standard with Array models.)
			Smart Array 642 Controller
			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter

NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

Wide Ultra320 SCSI – Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch	Up to 2	C, D	Integrated Dual Channel Wide Ultra3 SCSI Adapter
36-GB 10,000 rpm			Smart Array 532 Controller
			Smart Array 5302/128 Controller
			Smart Array 5304/256 Controller
			Smart Array 6402/128 Controller
			Smart Array 6404/256 Controller
			Smart Array 641 Controller
			(NOTE: The Smart Array 641 Controller now ships standard with Array models.)
			Smart Array 642 Controller
			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 30 Family	Up to 13	External	Smart Array 5304/256 Controller Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
Modular Smart Array 500 System	1	External	Smart Array 532 Controller (used as Host Bus Adapter) Please see the Modular Smart Array 500 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 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 1000: http://h18000.www1.hp.com/products/quickspecs/11033_div/11033_div.HTML (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML (North America)

Storage

Maximum Storage Capacity – (StorageWorks Enclosure)

Internal	1.174 TB (6 x 146.8-GB 1" Ultra320 hot plug hard drives with standard internal drive cage + 2 x 72.8-GB 1" Ultra320 Hot plug hard drive using the optional ML3xx Two Bay Hot Plug SCSI Drive Cage)
External	49.324 TB (14 x 146.8 GB) x 24
Total	50.498 TB

Tape Drives

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html (North America)

<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 Storage Systems listed below, please see the following:

http://h18000.www1.hp.com/products/quickspecs/North_America/10809.html (North America)

<http://h18000.www1.hp.com/products/quickspecs/Division/10809.html> (Worldwide)

	Quantity Supported	Position Supported	Controller
Internal AIT 100-GB, Hot Plug	Up to 3	0+ 1, 2+ 3,	Smart Array 532 Controller
Internal AIT 50-GB, Hot Plug		D+ C*	Smart Array 5302/128 Controller
Internal AIT 35-GB, LVD Hot Plug			Smart Array 5304/256 Controller
Internal 20/40-GB DAT Drive, Hot Plug			Smart Array 6402/128 Controller
Internal DAT 72, Hot Plug			Smart Array 6404/256 Controller
*Installation of AIT/DAT hot plug drives in D+C requires the optional Two Bay Hot Plug SCSI Drive Cage (PN 244059-B21)			Smart Array 641 Controller (NOTE: The Smart Array 641 now ships standard with Array models.)
Internal DAT 72, Hot Plug			Smart Array 642 Controller
20/40-GB DAT DDS-4 Tape Drive	Up to 2	C, D	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
Internal 12/24-GB DAT Drive			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
Internal DAT 72			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
AIT 35GB, Autoloader	Up to 4	External	Integrated Dual Channel Wide Ultra3 SCSI Adapter (requires Internal-to-External SCSI cable option) 64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
Internal 40/80-GB DLT Enhanced	Up to 1	C + D	Integrated Dual Channel Wide Ultra3 SCSI Adapter 64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
Internal 40/80-GB DLT VS	Up to 2	C, D	Integrated Dual Channel Wide Ultra3 SCSI Adapter 64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
AIT 100-GB Internal	Up to 2	C, D	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
AIT 50-GB Internal			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
AIT 35-GB, LVD Internal			
LTO Ultrium 230, Internal	Up to 1	C + D	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
LTO Ultrium 460, Internal			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
SDLT 110/220-GB, Internal	Up to 1	C + D	Integrated Dual Channel Wide Ultra3 SCSI Adapter
SDLT 160/320-GB, Internal			64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
External DAT 72	2	External	64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
AIT 100-GB External	2	External	Integrated Dual Channel Wide Ultra3 SCSI Adapter (requires Internal-to-External SCSI cable option)
AIT 50-GB External			
AIT 35-GB, LVD External			64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternative OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
External 40/80-GB DLT	Up to 3	External	Integrated Dual Channel Wide Ultra3 SCSI Adapter (requires Internal-to-External

Storage

Enhanced External 40/80-GB DLT VS External 20/40-GB DLT			SCSI cable option) 64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
LTO Ultrium 230, External LTO Ultrium 460, External	Up to 2	External	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
SDLT 110/220-GB, External SDLT 160/320-GB, External	Up to 2	External	Integrated Dual Channel Wide Ultra3 SCSI Adapter (requires Internal-to-External SCSI cable option) 64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
20/40-GB DAT 8 Cassette Autoloader External	Up to 1	External	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternative OS 64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter
SSL2020 AIT Library	2 drives per SCSI channel	External	64-Bit/66Mhz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS SAN Access Module for Smart Array 5302 Controller
MSL5026DLX (40/80GB DLT-based) MSL5026SL (SDLT-based) Library MSL5052SL (SDLT-based) Library MSL5030L (LTO-based) Library MSL5060S (LTO-based) Library	2 drives per SCSI channel	External	64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

Power Specifications

Part Number	264166-001
Spare Kit	292237-001
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	500	500	500	500	500	500
Nominal Input Current (A rms)	7.8	6.7	3.7	3.4	3.2	3.0
Max Rated Input Wattage Rating (Watts)	769	758	746	735	725	714
Max. Rated VA (Volt-Amp)	785	773	761	750	739	729
Efficiency (%)	65	66	67	68	68	70
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.31	0.36	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	21	24	43	46	48	50
Maximum Inrush Current duration (milliseconds)	20	20	20	20	20	20

System Specifications

ML350 Generation 3 (G3) Fully Configured

Up to 2 Processors, 4 Memory Slots, 8 Hard Drives, 5 PCI Slots, and 2 Hot Plug Power Supplies

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Fully Loaded System Input Wattage (W)	557	549	541	534	526	519
Fully Loaded System Input Current (A rms)	5.7	4.9	2.7	2.5	2.3	2.2
Fully Loaded System Thermal (BTU-Hr)	1900	1872	1846	1820	1794	1770
Fully Loaded System VA (Volt-Amp)	569	560	552	545	537	530
System Leakage with all power supplies loaded (mA)	0.63	0.72	1.30	1.38	1.44	1.50
System Inrush Current with all power supplies loaded (A)	42	48	86	92	96	100
Power cord requirements	Nema 5-15P to IEC320-C13			Option no./Spare no: See Power Cord chart		
	IEC320-C13 to IEC320-C14			Option no./Spare no: 142257-001/142258-B21		

NOTES:

ActiveAnswers Power Calculation

Power calculator is LIVE on ActiveAnswers Web site. This is an external link.

Follow this link: <http://h30099.www3.hp.com/configurator/powercalcs.asp>

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML350 G3
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

TechSpecs

System Unit – Tower	Dimensions (HxWxD) (with feet/bezel)	18.5 x 10.25 x 26 in (46.99 x 26.04 x 66.04 cm)	
	Dimensions (HxWxD) (without feet/bezel)	17.5 x 8.5 x 24 in (44.50 x 21.59 x 60.96 cm)	
	Weight (approximate)	60 lb (27.24 kg) (without hard drives)	
	Input Requirements (per power supply)	Range Line Voltage	100 to 120 VAC/200 to 240 VAC
		Rated Input Frequency	50 Hz to 60 Hz
		Input Power	538W @ 110 VAC
		Rated Input Current	7.4A/3.7A
		Line Frequency	50 to 60 Hz
	BTU Rating	1, 839 BTU/hr	
	SCSI Connectors	Two internal HD68 connectors (Support for either two internal, two external, or a mix of internal/external is available. This is achieved using an internal to external SCSI cable option kit (PN 159547-B22) and either of the two SCSI knockouts.)	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	500W
		Temperature Range	Operating 50° to 95° F (10° to 35° C) (No direct sustaining sunlight) Storage (up to one year) -40° to 158° F (-40° to 70° C)
	Maximum Wet Bulb Temperature	82.4° F (28° C)	
	Relative Humidity (non-condensing)	Operating	10% to 90%
		Non-operating	5% to 90%
Acoustic Noise	Idle (Fixed Disk Drives Spinning)		
	L WAd (BELS)	6.0	
	L pAm (dBA)	46.3	
	Operating (Random Seeks to Fixed Disks)		
	L WAd (BELS)	6.0	
	L pAm (dBA)	46.5	

TechSpecs

System Unit – Rack	Dimensions (HxWxD)	8.61 x19 x 24 in (21.87 x48.26 x 60.96 cm)	
	Weight (approximate)	60 lb (27.24 kg) (without hard drives)	
	Input Requirements (per power supply)	Range Line Voltage	100 to 120 VAC/200 to 240 VAC
		Rated Input Frequency	50 Hz to 60 Hz
		Input Power	538W @ 110 VAC
		Rated Input Current	7.4A/3.7A
	Line Frequency	50 to 60 Hz	
	BTU Rating	1, 839 BTU/hr	
	SCSI Connectors	Two internal HD68 connectors (Support for either two internal, two external, or a mix of internal/external is available. This is achieved using an internal to external SCSI cable option kit (PN 159547-B22) and either of the two SCSI knockouts.)	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	500W
	Temperature Range	Operating	50° to 95° F (10° to 35° C) (No direct sustaining sunlight)
		Storage (up to one year)	-40° to 158° F (-40° to 70° C)
	Maximum Wet Bulb Temperature	82.4° F (28° C)	
	Relative Humidity (non-condensing)	Operating	10% to 90%
		Non-operating	5% to 90%
Acoustic Noise	Idle (Fixed Disk Drives Spinning)		
	L WAd (BELS)	6.0	
	L pAm (dBA)	46.3	
	Operating (Random Seeks to Fixed Disks)		
L WAd (BELS)	6.0		
L pAm (dBA)	46.5		

1.44-MB Diskette Drive	LED Indicators (front panel)	Green	
	Read/Write Capacity per Diskette (high/low density)	1.44 MB/720 KB	
	Drive Supported	One	
	Drive Height	One-third	
	Drive Rotation	300 rpm	
	Transfer Rate (high/low)	500 K/250 K bits/s	
	Bytes/Sector	512	
	Sectors/Track (high/low)	18/9	
	Tracks/Side (high/low)	80/80	
	Access Times	Track-to-Track (high/low)	3/6 ms
		Average (high/low)	169/94 ms
		Settling Time	15 ms
		Latency Average	100 ms
Cylinders (high/low)	80/80		
Read/Write Heads	Two		

TechSpecs

48X Max IDE (ATAPI) CD-ROM Drive	Disk	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) Mixed Mode (Audio and Data combined) CD-R
		Capacity	540 MB (Mode 1, 12 cm) 650 MB (Mode 2, 12 cm)
	Block Size	Mode 1 Mode 2 CD-DA CD-XA	2,048 bytes 2,340 bytes, 2,336 bytes 2,352 bytes 2,328 bytes
	Interface	IDE (ATAPI)	
	Access Times (typical)	Random Full-Stroke	<100 ms <150 ms
	Data Transfer Rate	Sustained Burst Bus Rate	3000 to 7200 KB/s (20X to 48X) 150 KBps to 7,200 KBps 16.7 MBps
	Cache Buffer	128 KB	
	Start-up Time (typical)	< 7seconds	
	Stop Time	< 4seconds	
	Laser Parameters	Type Wave Length	Semiconductor Laser GaAlAs 780 ± 25 nm
	Operating Conditions	Temperature Humidity	41° to 113° F (5° to 45° C) 10% to 80%
	Dimensions	(HxWxD, maximum) Weight	1.7 x 5.85 x 8.11 in (4.29 x 14.86 x 20.60 cm) 2.09 lb (0.95 kg)

NC7760 PCI Gigabit Server Adapter (embedded)	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 80.3u 100Base-TX	
	Data Transfer Method	32-bit bus-master PCI	
	Network Transfer Rate	10Base-T(Half-Duplex) 10Base-T(Full-Duplex) 100Base-TX(Half-Duplex) 100Base-TX(Full-Duplex) 1000Base-TX	10 Mb/s 20 Mb/s 100 Mb/s 200 Mb/s 1000Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T 10/100/1000Base-TX	Categories 3, 4 or 5 UTP; up to 328 ft (100 m) Category 5 UTP; up to 328 ft (100 m)

TechSpecs

Integrated Dual Channel Wide Ultra3 SCSI Adapter	Drives Supported	Up to 28 SCSI devices (14 per channel)
	Data Transfer Method	64-bit PCI bus-master
	SCSI Channel Transfer Rate	160 MB/s per channel
	Maximum Transfer Rate per PCI Bus (peak)	267 MB/s per channel
	SCSI Protocols	Wide Ultra2 SCSI Wide-Ultra SCSI-3 Fast SCSI-2
	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 641 Controller <small>(NOTE: The Smart Array 641 Controller ships standard with the 2.8 GHz Array Models only)</small>	Protocol	Ultra320 SCSI
	SCSI Electrical Interface	Low Voltage Differential (LVD)
	Drives Supported	Up to 6 Ultra 320, Ultra3 and Ultra2 SCSI hard drives
	SCSI Port Connectors SA-641	One internal SCSI port
	Data Transfer Method	64-Bit PCI bus-master
	PCI Bus Speed	64-bit, 133-MHz PCI-X (1 GB/s maximum bandwidth)
	PCI	3.3 volt PCI slot compatibility only
	Simultaneous Drive Transfer Channels	One
	Channel Transfer Rate	320-MB/s total; 320-MB/s per channel
	Software upgradable Firmware	Yes
	Cache Memory	64-MB DRAM used for code, transfer buffers, and non-battery backed read cache
	Logical Drives Supported	32
	Maximum Capacity	880.8 GB (6 X 146.8 GB)
	Memory Addressing	64-bit, supporting servers memory greater than 4 GB
	RAID Support	RAID 5 (Distributed Data Guarding) RAID 1+0 (Striping & Mirroring) RAID 1 (Mirroring) RAID 0 (Striping)
	Upgradeable Firmware	2-MB Flashable ROM
	Disk Drive and Enclosure Protocol Support	Ultra 320, Ultra2 and Ultra3
	Warranty	Maximum: The remaining warranty of the HP server product in which it is installed (to a maximum three-year limited warranty) Minimum: One-year, on-site limited warranty Pre-Failure Warranty: Drives attached to the Smart Array Controller and monitored under Insight Manager are supported by a Pre-Failure (replacement) Warranty. For complete details, consult the HP Support Center or refer to your HP Server Documentation.

TechSpecs

Video Controller	Controller Chip	ATI RAGE XL
	Video DRAM	8 MB Video SDRAM
	Data Transfer Method	32-bit PCI
	Support Resolution	Supported Color Depths:
	640 x 480	16.7M, 64K, 256, 16
	800 x 600	16.7M, 64K, 256, 16
	1024 x 768	16.7M, 64K, 256, 16
	1152 x 864	16.7M, 64K, 256, 16
1280 x 1024	16.7M, 64K, 256, 16	
1600 x 1200	64K, 256, 16	
Connector	VGA	

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