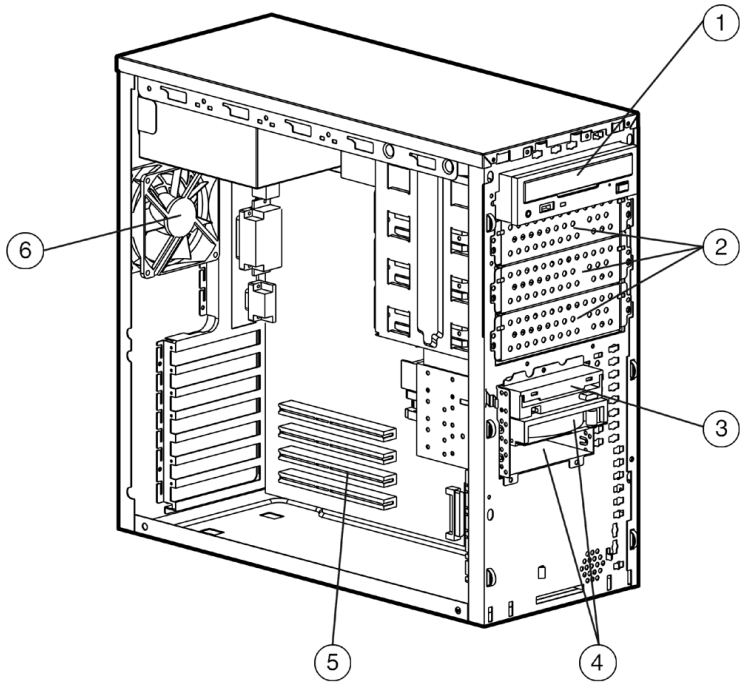
RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

Overview



1. 48X CD-ROM
2. Removable media bays
3. 1.44 MB Diskette Drive
4. Two 1" Non Hot Plug Drive
5. Four 64-bit/33MHz PCI slots
6. System Fan

At A Glance

- Supports 1 Intel Pentium 4, 2.8 GHz or 2.53 GHz processor with 512-KB second level ECC cache standard
- ServerWorks GC-SL Chipset with 533MHz FSB (2.8GHz & 2.53GHz models)
- 256-MB of PC2100 DDR SDRAM running at 266MHz, with Advanced ECC capabilities standard, expandable to 4 GB
- Four total slots available: four 64-bit/33MHz PCI
- NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
- Integrated Dual Channel Ultra ATA/100 Adapter with Integrated ATA RAID 0, 1, & 1+0 (ATA Models) or Integrated Single Channel Wide Ultra3 SCSI Adapter (SCSI Models)
- Support for up to five 1" Ultra3 or Ultra320 Non Hot Plug SCSI hard drives or four 1" ATA NHP Drives (depending on model)
- Internal SCSI storage capacity of up to 818.4 GB (2 x 300 GB hot plug 1" Ultra320 SCSI hard drives in optional 2x1 hot plug cage + 3 x 72.8 GB non-hot plug Ultra320 SCSI HD)
- Usable Internal ATA storage capacity of up to 520 GB (4 x 160 GB 1" ATA/100 drives)
- NOTE: The ProLiant ML310 supports a maximum of 130 GB capacity per ATA drive. When 160-GB ATA hard drives (PN 366486-B21) are connected to the internal ATA RAID controller, the ProLiant ML310 recognizes a capacity of 130-GB.
- Integrated ATI Rage XL with 8MB SDRAM video
- 300W Power Supply
- Two USB ports
- ROM Based Setup Utility (RBSU) and PXE support
- Insight Manager, SmartStart and Automatic Server Recovery-2 (ASR-2)
- Protected by HP Services, including a one-year, limited warranty, Next Business Day 1 year on-site limited Global warranty and Pre-Failure Warranty, which covers processors, memory, and hard drives - Certain restrictions and exclusions apply. Consult the Customer Support Center at 1-800-345-1518 for details.

Standard Features

Processor *One of the following depending on Model:*	Intel Pentium 4 processor 2.80 GHz Intel Pentium 4 processor 2.53 GHz	
Cache Memory	Integrated 512-KB Level 2 ECC cache	
Memory	Standard	256MB (PC2100 DDR SDRAM running at 266MHz, with Advanced ECC)
	Maximum	4 GB
Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated)	
Expansion Slots	I/O (4 Total, 4 Available) 64-bit/33MHz PCI	PCI Voltage: 3.3 volts
Storage Controllers	Integrated Single Channel Wide Ultra3 SCSI Adapter (SCSI Models) OR Integrated Dual Channel Ultra ATA-100 IDE Adapter with Integrated ATA RAID 0, 1, & 1+ 0 (ATA Models)	
Storage	Diskette Drive	1.44 MB Diskette Drive
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Hard Drives	One of the following: (1) 36.4 GB Wide Ultra3 SCSI 10,000 rpm 1" Drive (2.8GHz & 2.53GHz SCSI Models only) (1) 40 GB ATA/100 7200 rpm 1" Drive (Select ATA Models) (1) 80 GB ATA/100 7200 rpm 1" Drive (Select ATA Models)
	Maximum Internal Storage (SCSI Models)	818.4 GB Internal Maximum SCSI capacity (2 x 300 GB in optional 2x1 hot plug drive cage + 3 x 72.8 GB)
	Maximum Internal Storage (ATA Models)	520 GB (4 x 160.0 GB) (internal drive bays and removable media bays) **NOTE:** The ProLiant ML310 supports a maximum of 130 GB capacity per ATA drive. When 160-GB ATA hard drives (PN 366486-B21) are connected to the internal ATA RAID controller, the ProLiant ML310 recognizes a capacity of 130-GB.
Interfaces	Parallel	1
	Serial	2
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	USB	2 **NOTE:** Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.
	Network RJ-45 (Ethernet)	1
Graphics	Integrated ATI RAGE XL Video Controller with 8MB SDRAM Video Memory	
Form Factor	Tower (5U) (Tower to Rack Enabling Option Kit (PN 238547-B22) available)	

Standard Features

ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP's new HP Systems Insight Manager (HP SIM) helps 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. HP SIM are both easy to set up work with the Insight Management Agents, integrated Light-Out and Remote Insight Light-Outs Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP SIM 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 SIM 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 6.40.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages, linked from the SmartStart website at http://www.hp.com/servers/smartstart.
	Survey Utility and diagnostics utilities	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.
	Optional ProLiant Essentials Value Packs	Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs: • Rapid Deployment Pack – 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 Microsoft® 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.

Standard Features

Industry Standard Compliance	ACPI V1.0b Compliant PCI 2.2 Compliant PXE Support WOL Support Microsoft Logo certifications Novell Logo certifications
Manageability	Insight Manager 7 HP Systems Insight Manager Redundant ROM Online ROM Flash 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 BIOS Serial Console
Security	Power-on password Setup password Diskette boot control Power switch security Intruder Alert Message
Server Power Cords	All models ship with one 12' standard low-line country specific power cord.
Power Supply	300 Watts, PFC (Power Factor Correcting)
System Fans	1 - Non-hot plug, Non-redundant system fan shipped standard (**NOTE:** Does not include fans in CPU heatsink or power supply)
Required Cabling	For required cabling information, refer to the Web site at http://h18000.www1.hp.com/products/servers/ProLiantML310/.
OS Support	Microsoft BackOffice Small Business Server 2000 Microsoft Windows NT® Server 4.0 Microsoft Windows 2000 Server Novell NetWare 5.1 Novell Netware 6 Novell NetWare Small Business Suite 6 LINUX (Red Hat, SuSE) **NOTE:** For a more complete and up-to-date listing of supported OS's and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos **NOTE:** For an up-to-date listing of the latest drivers available for the HP ProLiant ML310, please see: http://h18023.www1.hp.com/support/files/server/us/index.html. **NOTE:** For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at: http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html **NOTE:** For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html

Rack Airflow Requirements Rack 10000 series Cabinets

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

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

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

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/ProLiantdl760/index.html.

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

One-year limited warranty, including hardware diagnostic support, pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HP Services and a worldwide network of resellers and service providers. In addition 90-day's getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services.

NOTE: Limited warranty includes 1 year parts, 1 year labor, 1-year on-site support

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack Services include HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3KVA. 22" and smaller external monitors will be covered at the same service level and coverage period as the server. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Models

ML310T01 P2800-512KB 256MB, 40GB, ATA 289918-xx2	**Processor(s)**	(1) Intel Pentium 4 2.80 GHz (standard)
	Cache Memory	Integrated 512-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) of Advanced ECC PC2100 DDR SDRAM DIMM Memory
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Ultra ATA-100 IDE Adapter with Integrated ATA RAID 0,1, & 1+0
	Hard Drives	40 GB Ultra ATA/100
	Internal Storage	520 GB maximum (with optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Option Kit available)
ML310T01 P2533-512KB 256MB, 40GB, ATA 306669-xx2	**Processor(s)**	(1) Intel Pentium 4 2.53 GHz (standard)
	Cache Memory	Integrated 512-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) of Advanced ECC PC2100 DDR SDRAM DIMM Memory
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Dual Channel Ultra ATA-100 IDE Adapter with Integrated ATA RAID 0,1, & 1+0
	Hard Drives	40 GB Ultra ATA/100
	Internal Storage	520 GB maximum (with optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Option Kit available)
ML310T01 P2800-512KB 256MB, 36GB, SCSI 289917-xx2	**Processor(s)**	(1) Intel Pentium 4 2.80 GHz (standard)
	Cache Memory	Integrated 512-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) of Advanced ECC PC2100 DDR SDRAM DIMM Memory
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Single Channel Ultra3 SCSI Adapter
	Hard Drives	(1) 36.4 GB Ultra320 SCSI 10,000 rpm
	Internal Storage	818.4 GB maximum (with optional 2x1 hot plug hard drive cage and optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Option Kit available)

Models

ML310T01 P2530-512KB 256MB, 36GB, SCSI 306667-xx2	**Processor(s)**	(1) Intel Pentium 4 2.53 GHz (standard)
	Cache Memory	Integrated 512-KB Level 2 cache
	Memory	256 MB (Standard) to 4 GB (Maximum) of Advanced ECC PC2100 DDR SDRAM DIMM Memory
	Network Controller	NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
	Storage Controller	Integrated Single Channel Ultra3 SCSI Adapter
	Hard Drives	(1) 36.4 GB Ultra320 SCSI 10,000 rpm
	Internal Storage	818.4 GB maximum (with optional 2x1 hot plug hard drive cage and optional hard drives)
	Optical Drive	48x IDE (ATAPI) CD-ROM Drive
	Diskette Drive	1.44 MB Diskette Drive
	Form Factor	Tower (5U) (Tower to Rack Enabling Option Kit available)

Country Code Key	XX=00	NA
	XX=01	Australia
	XX=03	UK
	XX=04	Germany
	XX=34	Austria
	XX=05	France
	XX=29	Japan
	XX=37	AP
	XX=42	Euro
	XX=AA	PRC

Options

ProLiant Essentials Value Pack Software	Rapid Deployment Pack, 1 User, V1.x NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	267196-B21
	Rapid Deployment Pack, 1 User, V1.x (Japan) NOTE: This license allows 1 server to be managed and deployed via the Deployment Server.	267196-291
	Rapid Deployment Pack, 10 Users, V1.x NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	269817-B21
	Rapid Deployment Pack, 10 Users, V1.x (Japan) NOTE: This license allows 10 servers to be managed and deployed via the Deployment Server.	269817-291
	ProLiant Essentials Workload Management Pack 2.0 (Featuring Compaq Resource Partitioning Manager version 2.0)	303284-B21
	ProLiant Essentials Performance Management Pack Single Server License NOTE: This license allows 1 server to be managed by Performance Management Pack.	306696-B21
	ProLiant Essentials Performance Management Pack Flexible License NOTE: A single pack is shipped with a single license key for the total number of licenses ordered	306697-B21
	ProLiant Essentials Performance Management Pack Tracking license	306698-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.	
NetServer to ProLiant integrations 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.	
Memory (SDRAM DIMMs)	1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB)	287497-B21
	512MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 512 MB)	287496-B21
	256MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 256 MB)	287495-B21
	128MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 128 MB)	287494-B21
Optical Drives	16X DVD-ROM Drive Option Kit (Carbon)	217053-B21
	CD-RW/DVD-ROM Combo Drive Option Kit 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).	331346-B21
Internal Storage	ML3xx Two Bay Hot Plug SCSI Drive Cage NOTE: This Drive Cage has one 1"drive bay and one 1.6"drive bay.	244059-B21

Options

Hard Drives

Ultra320 – Universal Non-Hot Plug	
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.	
36.4 GB U320 10,000 rpm Non-Hot Plug Hard Drive, (1")	271832-B21
36.4 GB U320 15,000 rpm Non-Hot Plug Hard Drive, (1")	357012-B21
72.8 GB U320 10,000 rpm Non-Hot Plug Hard Drive, (1")	332751-B21
Ultra320 – Universal Hot Plug	
300-GB 10,000 rpm U320 Universal Hard Drive (1")	350964-B22
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
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
ATA 100 – Non-Hot Plug (ATA Models only)	
160-GB ATA/100 7,200 rpm Drive (1")	366486-B21
NOTE: The ProLiant ML310 supports a maximum of 130 GB capacity per ATA drive. When 160-GB ATA hard drives (PN 366486-B21) are connected to the internal ATA RAID controller, the ProLiant ML310 recognizes a capacity of 130-GB.	
80-GB ATA/100 7,200 rpm Drive (1")	278424-B21
40-GB ATA/100 7,200 rpm Drive (1")	230534-B21
NOTE: Please see the Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: U320 Hard Drive QS: 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) ATA100 Hard Drive QS: http://h18000.www1.hp.com/products/quickspecs/11361_div/11361_div.HTML (Worldwide) http://h18000.www1.hp.com/products/quickspecs/11361_na/11361_na.HTML (North America)	

Storage Controllers – SCSI Drives

NOTE: The following Storage Controllers are qualified for SCSI drives only. They do not support ATA Drives.	
Smart Array 5304/256 Controller	283551-B21
Smart Array 5304/256 Controller (Japan)	283551-291
Smart Array 641 Controller	291966-B21
Smart Array 642 Controller	291967-B21
64 MB Battery Backed Write Cache Enabler	291969-B21
NOTE: This 64 MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.	
128MB Battery-Backed Cache Enabler	351580-B21
NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.	
64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter	268351-B21
64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS	284688-B21
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: http://h18000.www1.hp.com/products/quickspecs/10640_div/10640_div.HTML (Smart Array 5300 Series) http://h18000.www1.hp.com/products/quickspecs/12067_div/12067_div.HTML (Smart Array 641) http://h18000.www1.hp.com/products/quickspecs/12069_div/12069_div.HTML (Smart Array 642) http://h18000.www1.hp.com/products/quickspecs/10429_div/10429_div.HTML (SCSI Adapter)	

Options

Communications

HP NC1020 Cu Gigabit Server Adapter 32 PCI Single Port	353377-B21
NC6136 Gigabit Server Adapter, 64-bit/66MHz, PCI, 1000 SX	203539-B21
HP NC6770 PCI-X Gigabit Server Adapter, 1000-SX	244949-B21
NC7170 Dual Port PCI-X 1000T Gigabit Server Adapter	313881-B21

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

Country Code Key

XX = 00	US	XX = 15	Greece
XX = 01	Austria	XX = 16	S. America
XX = 03	UK	XX = 17	ARAB
XX = 04	Germany	XX = 18	Belgium
XX = 05	France	XX = 24	Poland
XX = 06	Italy	XX = 28	Thailand
XX = 07	Spain	XX = 29	Japan
XX = 08	Denmark	XX = 33	Netherlands
XX = 09	Norway	XX = 35	Finland
XX = 10	Sweden/Finland	XX = 37	APD
XX = 11	Switzerland	XX = AB	Taiwan
XX = 12	French Canadian	XX = AD	Korea
XX = 13	Portugal	XX = BB	HE
XX = 14	Turkey	XX = C9	LA MERCO

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
Compaq AXL300 Accelerator PCI Card (HW SSL Encryption) for ProLiant Servers	227933-B21

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: To run external SCSI-based devices, either an Internal-to-External SCSI Cable Option kit (for SCSI models) or a SCSI controller with external channel (for ATA models) must be purchased. Review the server cabling matrix for additional information on cables required to connect backup products to the server.

External, and Rack-Mount Ultrium Tape Drives

HP StorageWorks Ultrium 215 Tape Drive, External (Carbon)	Q1545A
HP StorageWorks Ultrium 215 rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350544-B21
HP StorageWorks Ultrium 215 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7492B
HP StorageWorks Ultrium 230 Tape Drive, External (Carbon)	Q1517A
HP StorageWorks Ultrium 230, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350545-B21
HP StorageWorks Ultrium 230 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7470B
HP StorageWorks Ultrium 460 Tape Drive, External (Carbon)	Q1520A
HP StorageWorks Ultrium 460, Rack-mount (Carbon) - Single drive installed in a 3U rack-mount kit	350546-B21
HP StorageWorks Ultrium 460 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1512B

NOTE: Please see the HP StorageWorks Ultrium 215, 230, and 460 Tape Drive QuickSpecs for additional options such as controllers, media, and other related items:

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

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

Internal, External, Hot-Plug, and Rack-Mount DAT Drives

NOTE: Use of a hot plug tape drives requires installation of the optional two-bay SCSI drive cage.

HP StorageWorks DAT 72 Tape Drive, External (Carbon)	Q1523A
HP StorageWorks DAT 72 Tape Drive, Internal (Carbon)	Q1522A
HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug (Carbon)	Q1529A
HP StorageWorks DAT 72 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	Q1524B
HP StorageWorks DAT 40 Tape Drive, External (Carbon)	C5687C
HP StorageWorks DAT 40 Tape Drive, Internal (Carbon)	C5686B
HP StorageWorks DAT 40 Tape Drive, Internal Hot-Plug (Carbon)	Q1546A
HP StorageWorks DAT 40 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7497B
HP StorageWorks DAT 24e Tape Drive, External (Flint)	C1556D
HP StorageWorks DAT 24 Tape Drive, Internal (Flint)	C1555D
HP StorageWorks DAT 24 Array Module (Carbon) - Offline hot-swap drive for Tape Array 5300	C7498A

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:
http://h18000.www1.hp.com/products/quickspecs/11883_div/11883_div.HTML (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML
(North America)
For an up-to-date listing of the latest O/S and software support details for HP DAT drives, please visit: http://www.hp.com/go/connect

Internal and External DLT VS Tape Drives

HP StorageWorks DLT VS80 Tape Drive, Internal (Carbon) WW	337699-B21
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) NA	337699-B22
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Int'l	337699-B31
HP StorageWorks DLT VS80 Tape Drive, External (Carbon) Japan	337699-291

NOTE: Please see the DLT VS80 Tape Drive QuickSpecs for additional options such as host bus adapters, controllers, media, and other options:
http://h18006.www1.hp.com/products/quickspecs/11403_div/11403_div.HTML (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/11403_na/11403_na.HTML
(North America)
For an up-to-date listing of the latest O/S and software support details for the DLT VS80, please visit:
http://www.hp.com/go/connect

External SDLT Tape Drives

HP StorageWorks SDLT 320 Tape Drive, External (Carbon) NA	257319-001
HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Int'l	257319-B31
HP StorageWorks SDLT 320 Tape Drive, External (Carbon) Japan	257319-291

NOTE: Please see the SDLT 320 Tape Drive QuickSpecs for additional options such as adapters, controllers, and media.
http://h18006.www1.hp.com/products/quickspecs/11840_div/11840_div.HTML (Worldwide)
http://h18006.www1.hp.com/products/quickspecs/11840_na/11840_na.HTML
(North America)
For an up-to-date listing of the latest O/S and software support details for HP SDLT tape drives, please visit: http://www.hp.com/go/connect

Rack-Mount Tape Drive Enclosures

HP StorageWorks 3U Rack-Mount Kit	274338-B21

NOTE: The 3U Rack-Mount Kit can support up to 2 full-height or 4 half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including DAT, DLT VS80, SDLT 320, Ultrium 215, Ultrium 230, and Ultrium 460 Tape Drives.

HP StorageWorks 5U Rack-Mount Kit	274339-B21

NOTE: The 5U Rack-Mount Kit can support up to 4 full-height tape drives and is compatible with SDLT 320, Ultrium 230, and Ultrium 460 tape drives.

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

HP StorageWorks Tape Array 5300	C7508A

NOTE: The Tape Array 5300 is a 3U enclosure that supports up to 2 full-height or 4 half-height hot-swap array modules, including DAT and Ultrium tape drives. Cables and terminators are not included and must be ordered separately.
NOTE: Please see the Tape Array 5300 QuickSpecs for additional information regarding this product.
http://h18000.www1.hp.com/products/quickspecs/11878_div/11878_div.HTML (Worldwide)
http://h18000.www1.hp.com/products/quickspecs/11878_na/11878_na.HTML (North America)

Accessories for 3U & 5U Rack-mount Tape Drive Kits

LVD Cable Kit, VHDCI/HD68	168048-B21

NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.

LVD Cable Kit, HD68/HD68	242381-B21

NOTE: For use with the 3U Rack-mount Kit and 5U Rack-mount Kit only.

Accessories for 3U & 5U Rack-mount Tape Drive Kits

PSU/Fan Upgrade Kit - Redundant hot-swap power supply unit and fan for Tape Array 5300.

68-pin HD multi-mode terminator	C2364A
1.0m 68-pin VHDCI to 68-pin HD cable	C2361B
2.5m 68-pin VHDCI to 68-pin HD cable	C2362B
5.0m 68-pin VHDCI to 68-pin HD cable	C2365A
10.0m 68-pin VHDCI to 68-pin HD cable	C2363B
0.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2978B
1.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2979B
0.9m 68-pin HDI to 68-pin HD cable LVD/SE	C2911C
2.5m 68-pin HDI to 68-pin HD cable LVD/SE	C2924C

NOTE: For use with Tape Array 5300 only

Tape Autoloaders

DAT Autoloader

HP StorageWorks DAT 40x6 Tape Autoloader, External (Flint)	C5717C

NOTE: Please see the DAT 40x6 Tape Autoloader QuickSpecs at http://www.hp.com/go/tape for additional options such as host bus adapters, controllers and media.

Options

External Storage – Tower & Rack	NOTE: To run any external SCSI-based devices, the customer must purchase an Internal to External Cable Option kit or an additional SCSI controller for SCSI models. For ATA models, a SCSI controller must be purchased.	
	HP StorageWorks Modular Smart Array 30 SB NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies.	302969-B21
	HP StorageWorks Modular Smart Array 30 DB NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies.	302970-B21
	NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.	
	Redundant Power Supply 499W	338296-B21
	StorageWorks Enclosure 4200 Redundant Power Supply Option	338296-B21
	StorageWorks Enclosure 4200 Ultra3 Single Bus I/O Module Option	190212-B21
	StorageWorks Enclosure 4200 Ultra3 Dual Bus I/O Module Option	190213-B21
	StorageWorks Single Bus U320 I/O Module	287484-B21
	StorageWorks Dual Bus U320 I/O Module	287483-B21
UPS and PDU Power Cord Matrix	**Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:** ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.	
Uninterruptible Power Systems – Tower Supply	HP T500 UPS 120 V (US)	361475-001
	HP Pro UPS 500 (300 Watt) 120V (NA)	136386-001
	HP Pro UPS 500 (300 Watt) 120V (Int'l)	136386-B31
	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 Model T1000 XR (1000VA, 700 Watt), Low Voltage) (NA)	204155-001
	HP UPS Model T1000 XR (1000VA, 700 Watt), High Voltage) (Int'l)	204155-B31
	HP UPS T1000 XR (1000VA, 700Watts) 100 VAC (JPN)	312803-291
	HP UPS Model T1500 XR (1440VA, 1050 Watt), Low Voltage) (NA)	204155-002
	HP UPS Model T1500 XR (1440VA, 1050 Watt), Low Voltage) (Int'l)	204155-B32
	HP UPS Model T1500 XR (1500VA, 1050 Watt), Low Voltage (JPN)	204155-291

Options

Uninterruptible Power Systems – Rack	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage (NA/Jpn)	326529-D71
	HP UPS R5500 XR, (6000VA, 5400 Watt), High Voltage (Int'l)	326529-B31
	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) Compaq UPS R3000 XR (200V) (Japan)	192186-292
	HP UPS R3000 XR (230V) (Int'l - detachable cord)	192186-B31
	HP UPS R3000 XR (230V) (16A IEC309 Plug)	192186-B32
	HP UPS R3000 XR (230V) (16A CEE 7/7 SCHUKO Plug)	192186-B33
	HP UPS R3000 XR (230V) (16A BS-546 Plug)	192186-AR1
	Rack-Mountable UPS R6000 (208V) (NA)	347207-001
	Rack-Mountable UPS R6000 (230V) (Int'l)	347207-B31
	Rack-Mountable UPS R6000 (200V) (Japan)	347207-291
	UPS R12000 XR N+ x (200-240V) (WW-hardwired)	207552-B22
	NOTE: UPS R6000 has a hardwired input; and the UPS R12000 XR has a hardwired input and output connection.	
Modular PDUs 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) (NA, Japan	252663-D71
	NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) (WW)	252663-B21
	NOTE: This mPDU (252663-B21), 40A model has a hardwired input.	
	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)	
Rack Enabling Kit	ProLiant ML310/ML330 G2 Rack Enabling Kit	238547-B22
	NOTE: Support for racks with round or square mounting holes (including all Compaq and HP Rack System /E and HP Systems), with an adjustment range of 24" – 36".	

Options

Other	ProLiant ML310 SCSI Cable Kit	273463-B21
	NOTE: This SCSI Cable Kit (PN 273463-B21) is required when installing an internal tape drive and a SCSI Controller. NOTE: This kit is supported on the ML310 and ML330 G2 servers.	
	Internal to External SCSI Cable Option Kit (HD68)	159547-B22
	Internal to External SCSI Cable Option Kit (VHDCI)	333370-B21
	Telco Rack Option Kit	251243-B21
	NOTE: Support for all 2-post Telco racks requires the use of the standard four post rack kit and an additional option kit from HP.	
USB Options	USB Optical Scroll Mouse (Carbonite)	DD441B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
Custom Builder	Please see the Enterprise Configurator for configuration assistance at: http://www.hp.com/products/configurator.	
HP Rack 10000 Series (Graphite Metallic)	HP Rack S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	HP Rack 10842 (42U) Rack Cabinet - Pallet	257415-B21
	HP Rack 10842 (42U) Rack Cabinet - Shock Pallet	257415-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10642 (42U) – Pallet	245161-B21
	HP Rack 10642 (42U) – Shock Pallet	245161-B22
	HP Rack 10642 (42U) – Crated	245161-B23
	HP Rack 10636 (36U) – Pallet	245162-B21
	HP Rack 10636 (36U) – Shock Pallet	245162-B22
	HP Rack 10636 (36U) – Crated	245162-B23
	HP Rack 10622 (22U) – Pallet	245163-B21
	HP Rack 10622 (22U) – Shock Pallet	245163-B22
	HP Rack 10622 (22U) – 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: 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/racks/index.html.	
Rack Options for HP Rack 10000 Series	HP Rack Light Kit (Neon)	361589-B21
	HP Rack Plinth Kit (Carbon)	251960-B21
	42U Side Panel – Graphite Metallic	246099-B21
	36U Side Panel – Graphite Metallic	246102-B21
	47U Side Panel – Graphite Metallic	255486-B21
	NOTE: For additional information regarding Rack Options, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.	
	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
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 (high voltage) (Int'l)	144007-B33
TFT5600 Rack Keyboard Monitor	221546-xx1

Country Code Key *(for TFT5600 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

1U Rack Keyboard & Drawer (Carbon)	257054-xx1

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

NOTE: For additional information regarding Rack Options, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.

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).	
Service and Support Offerings (HP Care Pack Services)	***Hardware Services 4-Hour On-site Service***	
	9-Hour x 5-Day Coverage, 3 Years (6-3 Part Number for U.S.)	162676-002
	9-Hour x 5-Day Coverage, 3 Years (2-5-2 Part Number for Canada)	FP-EL4HR-36
	9-Hour x 5-Day Coverage, 3 Years (6-3 Part Number for EMEA)	324416-002
	24-Hour x 7-Day Coverage, 3 Years (6-3 Part Number for U.S.)	162675-002
	24-Hour x 7-Day Coverage, 3 Years (2-5-2 Part Number for Canada)	FP-EL724-36
	24-Hour x 7-Day Coverage, 3 Years (6-3 Part Number for EMEA)	376910-022
	Hardware Services Next Business Day On-Site Service	
	9-Hour x 5-Day Coverage, 3 Years (6-3 Part Number for U.S.)	102407-002
	9-Hour x 5-Day Coverage, 3 Years (2-5-2 Part Number for Canada)	FP-ELXHW-36
	9-Hour x 5-Day Coverage, 3 Years (6-3 Part Number for EMEA)	206947-022
	Hardware Installation (6-3 Part Number for US)	401791-002
	Hardware Installation (2-5-2 Part Number for Canada)	FP-ELINS-IN
	Hardware Installation (6-3 Part Number for EMEA)	Quote
	Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Win NT Operating System plus up to 1 days start-up activity, configure print & network access services, and orientation. (6-3 Part Number for U.S.)	240013-002
	Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Win NT Operating System plus up to 1 days start-up activity, configure print & network access services, and orientation. (2-5-2 Part Number for Canada)	FM-MSTEC-01
	Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Novell NetWare Operating System plus up to 1 days start-up activity, configure print & network access services, and orientation (6-3 Part Number for U.S.)	240008-002
	Pre-installation planning; unpack equipment, install most current Compaq HW options internal to server at same time of server installation; assemble & test; basic user information provided; Install & configure basic functionality of Novell NetWare Operating System plus up to 1 days start-up activity, configure print & network access services, and orientation (2-5-2 Part Number for Canada)	FM-NSTEC-01
	Server Installation and Set-Up (Installation of the server, installation of the appropriate service tools, check to ensure device SW and firmware is loaded and installationof the operating system software (6-3 Part Number for EMEA)	204563-022

HP Care Pack Priority Services for ProLiant Servers – Priority Level	
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239928-002
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (2-5-2 Part Number for Canada)	FM-M01E1-36
9 x 5 HW, 4-hr response, Next Available HW engineer; 9 x 5 Bronze Software Support 2-hr response for Novell NetWare Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239968-002
9 x 5 4-hour H/W, 5 x 9 2-hour O/S (NT & NetWare), Three Years (6-3 Part Number for EMEA.)	179834-021
HP Care Pack Priority Services for ProLiant Servers – Priority 24 Level	
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Windows NT, Windows 2000, Professional, Server or Advanced Server Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239930-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Bronze Software Support, 2-hr response for Novell NetWare Operating System, Next Available Specialist (6-3 Part Number for U.S.)	239970-002
7 x 24 4-hour H/W, 7 x 24 2-hour O/S (NT & NetWare), Three years (6-3 Part Number for EMEA)	179839-022
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 (6-3 Part Number for U.S.)	239932-002
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 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 (6-3 Part Number for U.S.)	239934-002
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 (2-5-2 Part Number for U.S.)	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 (6-3 Part Number for U.S.)	239972-002
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 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 Operating System, Technical Account Manager, Technical Newsletter, SW activity review (6-3 Part Number for U.S.)	239974-002
24 x 7 HW, 4-hr response, Named HW engineer; 24 x 7 Silver Subsequent System Support for Novell NetWare Operating System Operating System, Technical Account Manager, Technical Newsletter, SW activity review (2-5-2 Part Number for Canada)	FM-N24E1-36

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

HP ProLiant ML310 Models

Standard Memory

256-MB of 2-way PC2100 DDR SDRAM running at 266MHz, with Advanced ECC capabilities Memory installed (1 x 256-MB SDRAM DIMM) (on 2.8GHz & 2.53GHz models).

Standard Memory Plus Optional Memory

Up to 3328-MB memory is available with the optional installation of PC2100 Registered ECC DDR SDRAM DIMM Memory kits (on 2.8GHz & 2.53GHz models).

Standard Memory Replaced with Optional Memory

Up to 4096-MB of memory is available with the removal of the standard 128-MB or 256-MB of memory and the optional installation of PC2100 Registered ECC DDR SDRAM DIMM Memory kits.

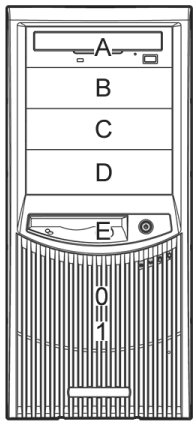
NOTE: Charts do not represent all possible memory configurations.

Memory		Slot			
		1	2	3	4
Standard	256MB	256 MB	Empty	Empty	Empty
Optional	3328 MB	256 MB	1024 MB	1024 MB	1024 MB
Maximum	4096 MB	1024 MB	1024 MB	1024 MB	1024 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
- 1024MB of Advanced ECC PC2100 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 287497-B21

Storage



A	48x IDE (ATAPI) CD-ROM
E	1.44 MB Diskette Drive
B, C, D	Removable Media Bays (1.6" each)
0, 1	1" Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	E	Integrated
IDE (ATAPI) CD-ROM Drive	Up to 2	A, B, C, or D	Integrated IDE (ATAPI)
DVD-ROM Drive Option Kit	Up to 2	A, B, C, or D	Integrated IDE (ATAPI)

Storage

Hard Drives (SCSI Models only)

Ultra320 SCSI – Non-Hot Plug

(**NOTE:** These drives will run at Ultra3 speeds, unless an optional Ultra320-capable controller is installed in a PCI slot)

	Quantity Supported	Position Supported	Controller
1-inch	Up to 5	0,1, B, C, D	Integrated Single Channel Wide Ultra3 SCSI Adapter (SCSI Models)
36.4-GB 10,000 rpm			Smart Array 5302/128 Controller
36.4-GB 15,000 rpm			Smart Array 5304/256 Controller
72.8-GB 10,000 rpm			Smart Array 641 Controller
			Smart Array 642 Controller
			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter

Ultra320 SCSI –Hot Plug

(These Hot Plug Drives are for use in conjunction with the ML3xx Two Bay SCSI Drive Cage (PN 244059-B21).

	Quantity Supported	Position Supported	Controller
1-inch	Up to 2	A+ B (need to	Integrated Single Channel Wide Ultra3 SCSI Adapter (SCSI Models)
300-GB 10,000 rpm		move CD-ROM	Smart Array 5302/128 Controller
146.8-GB 10,000 rpm		drive to C)	Smart Array 5304/256 Controller
72.8-GB 10,000 rpm			Smart Array 641 Controller
72.8-GB 15,000 rpm			Smart Array 642 Controller
36.4-GB 15,000 rpm			64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter

NOTE: On ATA models, must install an optional PCI-based SCSI controller to use these drives.

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.

Hard Drives (ATA Models only)

ATA/100 IDE – Non-Hot Plug

	Quantity Supported	Position Supported	Controller
1-inch	Up to 4	0,1, B, C, D	Integrated Dual Channel Ultra ATA-100 Adapter (ATA Models)
160.0-GB			
80.0-GB			
40.0-GB			

NOTE: The ProLiant ML310 supports a maximum of 130 GB capacity per ATA drive. When 160-GB ATA hard drives (PN 366486-B21) are connected to the internal ATA RAID controller, the ProLiant ML310 recognizes a capacity of 130-GB.

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 30 Family		External	Smart Array 642 Controller

Storage

Maximum Storage Capacity - ATA Models (SCSI Attached (StorageWorks Enclosure))

Internal	520 GB (4 x 160.0 GB) (internal drive bays and removable media bays) NOTE: The ProLiant ML310 supports a maximum of 130 GB capacity per ATA drive. When 160-GB ATA hard drives (PN 366486-B21) are connected to the internal ATA RAID controller, the ProLiant ML310 recognizes a capacity of 130-GB.
External	29.400 TB (14 x 300 GB) x 7 (Requires additional SCSI controllers in slots)
Total	30.040 TB

Maximum Storage Capacity - SCSI Models (SCSI Attached (StorageWorks Enclosure))

Internal	818.4 GB (2 x 300 GB hot-plug hard drives in optional 2x1 hot plug hard drive cage + 3 x 72.8 GB non-hot-plug hard drives)
External	29.400 TB (14 x 300 GB) x 7
Total	30.218 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://www5.compaq.com/products/quickspecs/North_America/10233.html (North America)
http://www5.compaq.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://www5.compaq.com/products/quickspecs/North_America/10809.html (North America)
http://www5.compaq.com/products/quickspecs/Division/10809.html (Worldwide)

	Quantity Supported	Position Supported	Controller
HP StorageWorks DAT 40 Tape Drive, Internal Hot-Plug HP StorageWorks DAT 72 Tape Drive, Internal Hot-Plug	Up to 2 (With optional ML3xx Two Bay Hot Plug SCSI Drive Cage)	A & B	Smart Array 5304/256 Controller Smart Array 6402/128 Controller Smart Array 6404/256 Controller Smart Array 642 Controller Smart Array 641 Controller 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks DAT 72 Tape Drive, Internal HP StorageWorks DAT 40 Tape Drive, Internal HP StorageWorks DAT 24 Tape Drive, Internal	Up to 2	B, C, D	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks DLT VS80 Tape Drive, Internal	Up to 2	B, C, D	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
Ultrium 215, External Ultrium 230, External Ultrium 460, External	Up to 2	External	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks DAT 72 Tape Drive, External HP StorageWorks DAT 40 Tape Drive, External HP StorageWorks DAT 24e Tape Drive, External	Up to 2	External	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks DLT VS80 Tape Drive, External	Up to 2	External	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks SDLT 320 Tape Drive, External	Up to 2	External	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks DAT 40x6 Tape Autoloader, External	Up to 2	External	64-Bit/133Mhz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

Power Specifications

Part Number	302199-001
Spare Kit	216108-001
Operational Input Voltage Range (V rms)	100-127V and 200-240V
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	300	300	300	300	300	300
Nominal Input Current (A rms)	4.7	4.0	2.2	2.0	1.9	1.8
Max Rated Input Wattage Rating (Watts)	462	455	448	441	435	429
Max. Rated VA (Volt-Amp)	471	464	457	450	444	437
Efficiency (%)	65	66	67	68	69	70
Power Factor	0.98					
Leakage Current (mA)	0.31	0.36	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	63	72	130	138	144	150
Maximum Inrush Current duration	20					

System Specifications

	Processor	Memory	HDD	PCI	PS	
ML310 Fully Configured	1	4	5	4	1	
Fully Loaded System Input Wattage (W)	274	270	266	262	258	255
Fully Loaded System Input Current (A rms)	2.8	2.4	1.3	1.2	1.1	1.1
Fully Loaded System Thermal (BTU- Hr)	935	921	908	894	881	869
Fully Loaded System VA (Volt-Amp)	280	276	272	268	264	260
System Leakage with all power supplies loaded (mA)	0.31	0.36	0.65	0.69	0.72	0.75
System Inrush Current with all power supplies loaded (A)	63	72	130	138	144	150
Power cord requirements	Nema 5-15P to IEC320-C13			Option no./Spare no: 227099-001/187335-001		
	IEC320-C13 to IEC320-C14			Option no./Spare no: 142257-001/142258-B21		

Example of real input watts consumed versus rated watts consumed is available via the online tool located at url: http://inline.compaq.com/pg/ecg/issd/power/psupply.asp select system calculator for one of the systems and reference the green fields at the bottom of the calculator.

NOTES:

* To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/powercalcs.asp.

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: ML310
- Click on: "Power Calculator" link (You may need to scroll down to see it.)

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

System Unit	**Dimensions** (HxWxD)	16.5 x 7.5 x 20.25 in (41.91 x 19.05 x 51.44 cm)	
	Weight(approximate)	34 lb (15.42 kg)	
	Input Requirements (per power supply)	Range Line Voltage	100-127V and 200-240V
		Normal Line Voltage	115 to 230 VAC
	Line Frequency	50 to 60 Hz	
	Rated Input Current	< 6A RMS at 90VAC with maximum load	
	BTU Rating	1,560 BTU	
	SCSI Connectors (SCSI Models only)	One internal HD68 connectors NOTE: Support for either one internal or one external SCSI channel is available. This is achieved using an internal to external SCSI cable option kit (PN 159547-B22) and SCSI knockout bracket.	
	Power Supply Output Power	Rated Steady-State Power	300W
		Maximum Peak Power	400W
	Temperature Range	Operating	50° to 93° F (10° to 35° C)
		Shipping	-40° to 150° F (-40° to 66° C)
	Relative Humidity (non-condensing)	Operating	20% to 80%
		Non-operating	5% to 90%
	Acoustic Noise	Idle (Fixed Disk Drives Spinning)	
		L WAd (BELS)	5.0
		L pAm (dBA)	34
		Operating (Random Seeks to Fixed Disks)	
		L WAd (BELS)	5.1
		L pAm (dBA)	35

Non-Hot Plug Wide Ultra320 SCSI Hard Drives	**36.4 GB 10K** 271832-B21	**Capacity**	36,419.2 MB	
		Height	1 in (2.54 cm)	
		Width	4 in (10.16 cm)	
		Interface	Wide Ultra3 SCSI	
		Transfer Rate Synchronous (Maximum)	320 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	5.4 ms
			Full-Stroke	11 ms
			Rotational	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	71,132,000
		Operating Temperature	50° to 95° F (10° to 35° C)	
	36.4 GB 10K 176497-B21	**Capacity**	36419.5 MB	
		Height	1 in (2.54 cm)	
		Width	4 in (10.16 cm)	
		Interface	Wide Ultra3 SCSI	
		Transfer Rate Synchronous (Maximum)	160 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	5.4 ms
			Full-Stroke	11 ms
			Rotational	10,000 rpm
		Physical Configuration	Logical Blocks	71,132,000
		Operating Temperature	50° to 95° F (10° to 35° C)	
Non-Hot Plug ATA/100 Hard Drives	**40 GB 7.2K** 230534-B21	**Capacity**	40020 MB (phys.) 40800 MB (log)	
		Height	1 in (2.54 cm)	
		Width	4 in (10.16 cm)	
		Interface	Ultra ATA/100	
		Transfer Rate Synchronous (Maximum)	100 MB/s	
		Seek Time (typical reads, including settling)	Single Track	0.8 ms
			Average	8.5 ms
			Full-Stroke	17.8 ms
			Rotational	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	78,177,792
		Operating Temperature	41° to 131° F (5° to 55° C)	

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	2,048 bytes
		Mode 2	2,340 bytes, 2,336 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	IDE (ATAPI)	
	Access Times (typical)	Random	<100 ms
		Full-Stroke	<150 ms
	Data Transfer Rate	Sustained	3000 to 7200 KB/s (20X to 48X)
		Burst	150 KBps to 7,200 KBps
		Bus Rate	16.7 MBps
	Cache Buffer	128 KB	
	Start-up Time (typical)	< 7seconds	
	Stop Time	< 4seconds	
	Laser Parameters	Type	Semiconductor Laser GaA1As
		Wave Length	780 ± 25 nm
	Operating Conditions	Temperature	41° to 113° F (5° to 45° C)
		Humidity	10% to 80%
	Dimensions	(HxWxD, maximum)	1.7 x 5.85 x 8.11 in (4.29 x 14.86 x 20.60 cm)
		Weight	2.09 lb (0.95 kg)

Integrated Dual Channel Ultra ATA-100 Adapter (ATA Models only)	**Drives Supported**	Up to 4 IDE devices (2 devices/channel)
	Channels	2 (primary and secondary)
	Storage Capacity	320 GB
	Data Transfer Method	32-bit/33-MHz PCI bus-master
	Maximum ATA Channel Transfer Rate	100 MB/s per channel
	Maximum Transfer Rate per PCI Bus (peak)	133 MB/s per channel
	ATA Protocols	UDMA Mode[0-5]
		PIO Mode[0-4]
	ATA 100 Cable	80-Conductor Cable
	Internal ATA Connectors	Two 40-Pin Connectors (primary and secondary)

Integrated Single Channel Wide Ultra3 SCSI Adapter (SCSI Models only)	**Drives Supported**	Up to 7 SCSI devices Wide
	Data Transfer Method	64-bit/33-MHz 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 Ultra3 SCSI, Wide Ultra2 SCSI,Wide Ultra SCSI-3, Fast-Wide SCSI-2, and Fast SCSI-2
		Fast SCSI-2
	Electrical Protocol	Low Voltage Differential (LVD)
	SCSI Termination	Active Termination
	External SCSI Connectors	None.
		NOTE: Buy extra controller or internal to external SCSI option kit (part number 159547-B22).
	Internal SCSI Connectors	One 68-Pin Wide Ultra SCSI-3 connectors

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