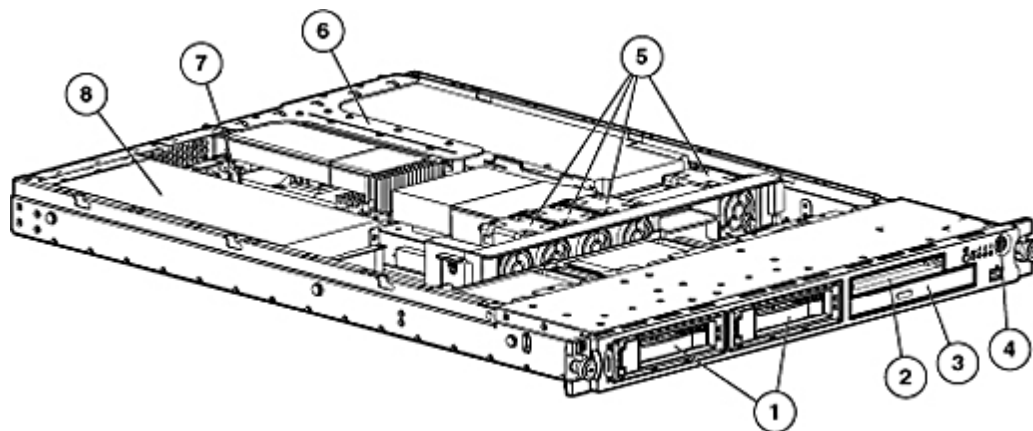


Overview



1. Support for up to two SATA or SCSI non-hot plug hard drives
2. Optional 1.44MB Diskette Drive Assembly Option Kit
3. Optional CD-ROM/DVD-ROM Drive Assembly Option Kit
4. Front LED Indicators
5. Fan Assembly, 4 NHP Dual Rotor Fans with N+1 Redundancy
6. Two PCI-X slots standard with an optional PCI Express slot
7. 4 - PC3200 DDR1 Memory Slots
8. Power Supply

What's New

- Intel Pentium 4 Processor 660 with HT Technology and EM64T 3.6 GHz 2MB Level 2 Cache
- Hot Plug SATA and SAS (Serial Attached SCSI) Drive support with the optional 8 port Internal SAS HBA
- Optional CD-RW/DVD Combo Drive
- Support for new iLO Shared Network Port enables access to the iLO management processor through one of the embedded system NICs

At a Glance

- At a Glance
- Several processor options to choose from:
 - Intel Celeron D Processor 340J 2.93 GHz/533MHz FSB 256KB Level 2 Cache
 - Intel Pentium 4 Processors with HT Technology and EM64T 3.4 GHz with 1M or 2M L2 Cache
 - Intel Pentium 4 Processors with HT Technology and EM64T 3.6 GHz with 1MB or 2MB Level 2 Cache (Factory Integrated Only)
- Up to 4GB of advanced ECC PC3200 DDR 400MHz SDRAM Memory
 - 1GB standard in all Pentium 4 models
 - 512 MB in Celeron D models
- Two available PCI-X slots, including one full-length 64-bit/133MHz slot and one half-length, low-profile 64-bit/100MHz slot
- Optional PCI-Express full-length slot
- Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
- Integrated iLO Remote Management
- HP embedded 2 Port SATA Controller with RAID 0/1 support
- 1U (1.70") Form Factor
- Optional CD,DVD, or CD-RW/DVD Combo drive and Floppy drive
- Four USB ports (1 front, 1 internal and 2 in rear)
- Intel E7221 Chipset with 800MHz Front Side Bus (533MHz for Celeron Processors)
- New spring-loaded Universal sliding rails for in rack servicing ship standard
- Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system

Overview

health and UID and SmartStart

- Internal Storage capacity of 500 GB (2 x 250 GB SATA hard drives) or 145.6 GB (2 x 72.8 GB SCSI or SAS hard drives)
- 350 Watt PFC Power Supply
- Internal USB port can also be used as internal USB port for leave-in USB key support
- Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives. SATA hard drives have a one-year warranty.

Standard Features

Processor One of the following depending on Model	Intel Celeron D 2.93 GHz Intel Pentium 4 with HT Technology and EM64T 3.4 GHz Intel Pentium 4 with HT Technology and EM64T 3.6 GHz (Factory Integrated Only)																									
Processor Cache One of the following depending on Model	256KB Level 2 Cache (Celeron D models) 1MB Level 2 Cache (Pentium 4 models) 2MB Level 2 Cache (Pentium 4 models)																									
Chipset One of the following depending on Model	Intel E7221 chipset with 800MHz Front Side Bus (Pentium 4 Models) Intel E7221 chipset with 533MHz Front Side Bus (Celeron D Models)																									
Memory Protection	Advanced ECC																									
Memory One of the following depending on Model	<table border="1"> <tr> <td>Type</td> <td>PC3200 DDR SDRAM running at 400MHz</td> </tr> <tr> <td>Standard (Pentium 4 models)</td> <td>1 GB (1x 1024 MB)</td> </tr> <tr> <td>Standard (Celeron D models)</td> <td>512 MB (1 x 512 MB)</td> </tr> <tr> <td>Maximum</td> <td>4 GB</td> </tr> </table>	Type	PC3200 DDR SDRAM running at 400MHz	Standard (Pentium 4 models)	1 GB (1x 1024 MB)	Standard (Celeron D models)	512 MB (1 x 512 MB)	Maximum	4 GB																	
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Expansion Slots	<table border="1"> <thead> <tr> <th>Slot Number</th> <th>Bus Speed</th> <th>Height</th> <th>Hot Plug</th> <th>PCI Voltage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>64-bit/133 MHz PCI-X</td> <td>Full</td> <td>no</td> <td>3.3 Volt</td> </tr> <tr> <td>2</td> <td>64-bit/100 MHz PCI-X</td> <td>Half</td> <td>no</td> <td>3.3 Volt</td> </tr> <tr> <td>1</td> <td>PCI Express x4 (x8 connector)</td> <td>Full</td> <td>no</td> <td></td> </tr> <tr> <td>2</td> <td>64-bit/100 MHz PCI-X</td> <td>Half</td> <td>no</td> <td>3.3 Volt</td> </tr> </tbody> </table>	Slot Number	Bus Speed	Height	Hot Plug	PCI Voltage	1	64-bit/133 MHz PCI-X	Full	no	3.3 Volt	2	64-bit/100 MHz PCI-X	Half	no	3.3 Volt	1	PCI Express x4 (x8 connector)	Full	no		2	64-bit/100 MHz PCI-X	Half	no	3.3 Volt
Slot Number	Bus Speed	Height	Hot Plug	PCI Voltage																						
1	64-bit/133 MHz PCI-X	Full	no	3.3 Volt																						
2	64-bit/100 MHz PCI-X	Half	no	3.3 Volt																						
1	PCI Express x4 (x8 connector)	Full	no																							
2	64-bit/100 MHz PCI-X	Half	no	3.3 Volt																						
Storage Controllers	HP embedded 2 Port SATA Controller with RAID 0/1 support. SAS and SCSI controllers available via PCI card.																									

Standard Features

Storage	Diskette Drive	Optional 1.44 MB Diskette Drive option kit is available NOTE: Purchase of floppy drive is required to implement embedded SATA RAID 0/1 with SmartStart 7.2.	
	Optical Drive	Optional CD-ROM, DVD-ROM option kits available NOTE: Purchase of CD-ROM is required for installation of SmartStart.	
	Hard Drives	One of the following: (depending on model): None 80 GB SATA HDD	
Maximum Internal Storage Type	Non-Hot Plug SCSI	145.6 GB	2 x 72.8 GB Ultra320
	Hot Plug SAS	292 GB	2 x 146 GB SAS
	Hot Plug SATA	500 GB	2 x 250 GB Serial ATA
Interfaces	Serial	1	
	USB	4	NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
	Graphics	1	
	Keyboard	1	
	Mouse	1	
	Network RJ-45	2	
	iLO remote management port	1	
Graphics	Integrated ATI RAGE XL Video Controller with 8-MB SDRAM Video Memory		
Form Factor	Rack (1U), (1.70 in/4.45 cm)		
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 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 .	

Standard Features

SmartStart	SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart . SmartStart version supported (minimum): SmartStart 7.2.
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 HP Systems Insight Manager 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 .
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: <ul style="list-style-type: none">• 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.• Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions.

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 2.0 PCI 2.2 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0
Intelligent Manageability	Automatic Server Recovery (ASR) iLO Advanced Pack (optional) HP Systems Insight Manager Integrated Management Log Drive Parameter Tracking (with Smart Array Controllers) Dynamic Sector Repairing (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SCSI hard drives, SATA HDDs and memory)
Security	Power-on password Keyboard password Diskette drive control Diskette boot control Removable CD-ROM/Diskette Drive Assembly Administrator's password
Server Power Cords	One 12' Lowline and one 10' Highline (IEC-IEC) power cord ships standard
Power Supply	Auto-sensing 350-Watt PFC Power Supply, CE Mark Compliant
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 .
System Fans	4 dual rotor fans ship standard. 4 dual rotor fans total supported internally. N+1 (1 rotor only) Redundancy.
Ultra Thin Rack Deployment Overview	For the Ultra Thin Rack Deployment Overview, including best practices for the HP ProLiant DL320 G3, please see the following URL: http://www.hp.com/products/servers/ProLiantdl320/ .
Required Cabling	For required cabling information, refer to the Web site at: http://www.hp.com/products/servers/ProLiantdl320/ .

Standard Features

OS Support

Microsoft Windows 2000 Server
Windows Server 2003 (web and standard editions; standard edition for 64-bit extensions)
Linux (Red Hat, SuSE, UnitedLinux)
VMware Virtualization Software

NOTE: Support differences will exist between the SATA and SCSI configurations.

NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: <http://www.hp.com/go/supportos>.

NOTE: For an up-to-date listing of the latest drivers available for the HP ProLiant DL320, 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>

NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:

<http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html>.

Rack Airflow Requirements

Rack 10000 series Cabinets

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

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

- **Front and rear doors:** If your 42U server rack includes closing front and rear doors, you must allow 5,350 sq cm (830 square inches) 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 7 cm (2.75 inches)

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://h18004.www1.hp.com/products/servers/proliantdl320/index.html>.

Standard Features

HP Factory Express Capabilities

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

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA3000 & EVA5000, XP, rackable tape libraries and configurable network switches.

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

Custom Builder

Please see the Enterprise Configurator for configuration assistance at: <http://www.hp.com/products/configurator>.

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Limited warranty includes 3 year parts, 1 year labor, 1-year on-site support.

NOTE: SATA drives have a 1 year warranty.

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

Standard Features

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

DL320R03 C2.93- 256KB, 512MB 372708-001	Processor(s)	Intel Celeron D Processor 340J 2.93 GHz
	Cache Memory	256 KB Level 2 cache
	Chipset	Intel E7221 chipset with 533MHz Front Side Bus
	Memory	512MB (Standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	None ship standard
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	Optional
	Diskette Drive	Optional
	Form Factor	Rack (1U), (1.70 in/4.45 cm)
	<hr/>	
DL320R03 P3.4-1MB, 1GB 372709-001	Processor(s)	Intel Pentium 4 Processor 541 with HT Technology and EM64T 3.4 GHz
	Cache Memory	1MB Level 2 Cache
	Chipset	Intel E7221 chipset with 800MHz Front Side Bus
	Memory	1 GB (standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	None ship standard
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	Optional
	Diskette Drive	Optional
	Form Factor	Rack (1U), (1.70 in/4.45 cm)

Models

DL320R03 P3.4-1MB, 1GB, 80GB SATA 370669-001	Processor(s)	Intel Pentium 4 Processor 541 with HT Technology and EM64T 3.4 GHz
	Cache Memory	1MB Level 2 Cache
	Chipset	Intel E7221 chipset with 800MHz Front Side Bus
	Memory	1GB (standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	80GB SATA HDD
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	Optional
	Diskette Drive	Optional
Form Factor	Rack (1U), (1.70 in/4.45 cm)	

DL320R03 P3.4-2MB, 1GB 372710-001	Processor(s)	Intel Pentium 4 Processor 650 with HT Technology and EM64T 3.4 GHz
	Cache Memory	2MB Level 2 Cache
	Chipset	Intel E7221 chipset with 800MHz Front Side Bus
	Memory	1GB (standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	None ship standard
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	Optional
	Diskette Drive	Optional
Form Factor	Rack (1U), (1.70 in/4.45 cm)	

Models

DL320R03 P3.4-2MB, 1GB, 80GB SATA 370670-001	Processor(s)	Intel Pentium 4 Processor 650 with HT Technology and EM64T 3.4 GHz
	Cache Memory	2MB Level 2 Cache
	Chipset	Intel E7221 chipset with 800MHz Front Side Bus
	Memory	1GB (standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	80GB SATA HDD
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	Optional
	Diskette Drive	Optional
Form Factor	Rack (1U), (1.70 in/4.45 cm)	

DL320R03 P3.4-1MB, 1GB, 80GB SATA VPN 385841-001	Processor(s)	Intel Pentium 4 Processor 541 with HT Technology and EM64T 3.4 GHz
	Cache Memory	1MB Level 2 Cache
	Chipset	Intel E7221 chipset with 800MHz Front Side Bus
	Memory	1GB (standard) to 4GB (Maximum) of Advanced ECC PC3200 DDR SDRAM DIMM Memory
	Network Controller	Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter
	Storage Controller	Intel® 82801FR Integrated Serial ATA Host Controller
	Hard Drives	80GB SATA HDD
	Drive Backplane/Cables	None ship standard - See ProLiant DL320 G3 Unique Options below for required hard drive option kits and hard drives.
	Internal Storage	500 GB for SATA models, 145.6 GB for SCSI models
	Optical Drive	CD-ROM Drive
	Diskette Drive	Optional
Form Factor	Rack (1U), (1.70 in/4.45 cm)	

NOTE: The HP ProLiant DL320 Firewall/VPN/Cache Server running Microsoft® Internet Security & Acceleration Server 2004 is a prepackaged, preconfigured hardware/software advanced firewall, VPN, and Web caching solution that can be quickly and easily deployed in multiple network environments to protect key business applications especially Microsoft Exchange against new and emerging security threats.

For additional information, please see: <http://www.hp.com/servers/DL320FW-VPN-Cache>

NOTE: Embedded SATA RAID 0/1 is not supported on the HP ProLiant DL320 Firewall/VPN/Cache Server.

Configuration Information - Factory Integrated Models

NOTE: HP does not allow factory integration of options into standard models listed above.

Configure-to-order servers must start with a CTO Chassis.

NOTE: This product offering does not support HP Factory Express Server Configuration Level 1.

Step 1: Base Configuration (choose one of the following configurable models)

Models	<p>HP ProLiant DL320G3 SATA Rack CTO Chassis 374295-405</p> <p>Factory Integrated Model ships with:</p> <p>Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter</p> <p>1 full length/height and 1 half length-low profile 64bit PCI-X slot</p> <p>Integrated Lights-Out (iLO) embedded</p> <p>DL320 G3 SAS/SATA HDD Backplane Option Kit</p> <p>Rack (1U) form factor, (1.70 in/4.45 cm)</p>
	<p>HP ProLiant DL320G3 SCSI Rack CTO Chassis 383338-405</p> <p>Factory Integrated Model ships with:</p> <p>Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit network adapter</p> <p>1 full length/height and 1 half length-low profile 64bit PCI-X slot</p> <p>Non Hot Plug U320 SCSI Option Kit</p> <p>Integrated Lights-Out (iLO) embedded</p> <p>DL320 G3 Non Hot Plug U320 SCSI Option Kit</p> <p>Rack (1U) form factor, (1.70 in/4.45 cm)</p>

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

Processors	<p>X3.6/PIV/2M DL320G3 FIO ALL 399664-L21</p> <p>X3.4/PIV/2M DL320G3 FIO Base 385652-L21</p> <p>X3.6/PIV/1M DL320G3 FIO Base 374868-L21</p> <p>X3.4/PIV/1M DL320G3 FIO Base 374867-L21</p> <p>X2.93/CELERON/256KB DL320G3 FIO Base 374866-L21</p>
Base Memory	<p>512MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512MB) 354560-B21</p> <p>1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 X 1024MB) 354563-B21</p>
Optical Drive	<p>HP DVD/CD RW Drive Option (ALL) 377402-B21</p> <p>DL320G3 CD Drive 372703-B21</p> <p>NOTE: Required for installation of SmartStart and OS.</p> <p>DL320G3 DVD-ROM Drive 374303-B21</p> <p>DL320G3 FLOPPY DRIVE 372702-B21</p> <p>NOTE: Required for installation of SW SATA RAID.</p>

Configuration Information - Factory Integrated Models

Step 3: Choose Additional Factory Integratable Options

Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	HP 8 Internal Port SAS HBA with RAID	347786-B21
	NOTE: The HP 8 Internal Port SAS/SATA HBA with RAID requires the purchase of the SATA Rack FIO model and the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21)	
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 6402/128 Controller	273915-B21
	Smart Array 641 Controller	291966-B21
	Smart Array 642 Controller	291967-B21
	Hard Drives	Ultra320 Non-Hot Plug
36.4 GB 15,000 rpm, U320 Non-Hot Plug Hard Drive (1")		357012-B21
72.8 GB 10,000 rpm, U320 Non-Hot Plug Hard Drive (1")		332751-B21
Serial Attached SCSI - SAS		
HP 36 GB SAS 15,000 rpm Hard Drive (3.5")		375868-B21
HP 72 GB SAS 15,000 rpm Hard Drive (3.5")		375870-B21
Serial ATA (SATA)		
80-GB SATA 1.5Gb 7,200 rpm Hard Drive (1")		349237-B21
160-GB SATA 1.5Gb 7,200 rpm Hard Drive (1")		349238-B21
250-GB SATA 1.5Gb 7,200 rpm Hard Drive (1")		349239-B21
NOTE: Please note that Serial ATA hot-plug capability and drive LEDs are not supported by the DL320 G3 embedded SATA storage controller.		

Step 4: Choose Additional Options for Factory Integration

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

Options

ProLiant DL320 G3 Unique Options	PCI-X/PCI-EXPRESS RISER	374281-B21
	Floppy Drive Option Kit	372702-B21
	HP DVD/CD RW Drive Option (ALL)	377402-B21
	DVD ROM Drive Option	374303-B21
	CD ROM Drive Option	372703-B21
	DL320 Hot Plug SAS/SATA Cable Option Kit	398307-B21
	NOTE: This option is required for the HP 8 int. Port SAS/SATA HBA with RAID. This option with the addition of the DL320G3 SAS/SATA HDD Backplane Option Kit and the HP 8 int. Port SAS/SATA HBA with RAID enables the DL320 G3 for Hot Plug and LED drive support.	
	DL320 G3 SAS/SATA HDD Backplane Option Kit	372704-B21
NOTE: This option is required on the non-hard drive models for any supported SATA HDD options.		
DL320 G3 Non Hot Plug U320 SCSI Option Kit	374282-B21	
NOTE: This option is required for use with any supported non Hot Plug U320 SCSI HDD options. A PCI controller is also required; please see Storage Controllers below for U320 controller options.		
<hr/>		
ProLiant Essentials Value Pack Software	ProLiant Essentials Integrated Lights-Out Advanced Pack	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server	263825-B21
	Featuring: sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.	
	NOTE: For additional ProLiant Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML	
	ProLiant Essentials Intelligent Networking Pack	
	ProLiant Essentials Intelligent Networking Pack, Single Server License	372906-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.		
NOTE: For additional ProLiant Intelligent Networking Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML		
ProLiant Essentials Intelligent Networking Pack - Linux Edition, Single Server License	397004-B21	
NOTE: For additional ProLiant Intelligent Networking Pack - Linux License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML		
ProLiant Essentials Performance Management Pack		
ProLiant Essentials Performance Management Pack, Single-Server License	306696-B21	
NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.		
NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp .		
NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML		
ProLiant Essentials Rapid Deployment Pack Windows Edition and Linux Edition Release		

Options

<p>Rapid Deployment Pack, Single-Server License 267196-B21</p> <p>NOTE: This license allows 1 server to be deployed and managed via RDP.</p> <p>NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML</p> <p>http://h18000.www1.hp.com/products/quickspecs/11713_na/11713_na.HTML</p> <p>ProLiant Essentials Workload Management Pack</p> <p>ProLiant Essentials Workload Management Pack, Single Server License 303284-B21</p> <p>NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML</p> <p>ProLiant Essentials Virtualization Management Software</p> <p>ProLiant Essentials Virtual Machine Management Pack, Single-Server License 372214-B21</p> <p>NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.</p> <p>ProLiant Essentials Server Migration Pack, Single-Migration License</p> <p>NOTE: Contains one license, enabling 1 server migration, with a unique license activation key and documentation.</p> <p>NOTE: This license allows 1 server to be migrated from a physical server to a virtual machine. Or this license can be used to migrate a virtual machine from one virtualization layer i.e. VMware GSX to a different virtualization layer such as VMware ESX or Microsoft Virtual Server 2005.</p> <p>NOTE: For additional ProLiant Essentials Virtualization Management Software License Kits please see the QuickSpecs at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/12328_na/12328_na.HTML</p> <p>ProLiant Essentials Vulnerability and Patch Management Pack</p> <p>ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License 371645-B21</p> <p>NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.</p> <p>NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at:</p> <p>http://h18000.www1.hp.com/products/quickspecs/12111_na/12111_na.HTML</p> <p>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.</p> <p>NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.</p>	
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Software Options	HP ProLiant DL320 Firewall/VPN/Cache Server (pre-installed software only)	382009-B21
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Memory (DIMMs)	1024MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 X 1024MB)	354563-B21
	512MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512MB)	354560-B21

Options

Internal Storage	CD-ROM Drive Assembly Option Kit	372703-B21
	Floppy Drive Assembly Option kit	372702-B21
	DVD-ROM Drive Assembly Option Kit	374303-B21
	HP DVD/CD RW Drive Option	377402-B21
	DL320 G3 Non Hot Plug U320 SCSI Option Kit	374282-B21
	DL320 G3 SAS/SATA HDD Backplane Option Kit	372704-B21
	NOTE: When adding either SATA or U320 SCSI drives to a non-hard drive DL320 G3 model, the appropriate option kit above is required for operation.	

Hard Drives

Ultra320 - Universal Non-Hot Plug

72.8 GB 10,000 rpm, U320 Non-Hot Plug Hard Drive, 1"	332751-B21
36.4 GB 15,000 rpm, U320 Non-Hot Plug Hard Drive, 1"	357012-B21

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 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_na/11531_na.HTML

Serial Attached SCSI - SAS

HP 36 GB SAS 15,000 rpm Hard Drive (3.5")	375868-B21
HP 72 GB SAS 15,000 rpm Hard Drive (3.5")	375870-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:

SAS Hard Drive QS:

http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML

Serial ATA (SATA)

250-GB SATA 1.5Gb 7,200 rpm Hard Drive, 1"	349239-B21
160-GB SATA 1.5Gb 7,200 rpm Hard Drive, 1"	349238-B21
80-GB SATA 1.5Gb 7,200 rpm Hard Drive, 1"	349237-B21

NOTE: Please note that Serial ATA hot-plug capability and drive LEDs are not supported by the DL320 G3 embedded SATA storage controller. The purchase of the HP 8 Internal Port SAS HBA with RAID, the DL320 G3 SAS/SATA HDD Backplane Option Kit, and the DL320 Hot Plug SAS/SATA Cable Option Kit is required for Hot Plug and LED SAS/SATA support.

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:

SATA Hard Drive QS:

http://h18000.www1.hp.com/products/quickspecs/11940_na/11940_na.HTML

Options

Storage Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	HP 8 Internal Port SAS HBA with RAID	347786-B21
	NOTE: The HP 8 int. Port SAS/SATA HBA with RAID requires the purchase of the SATA Rack FIO model and the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21).	
	Smart Array 6404/256 Controller	273914-B21
	Smart Array 6402/128 Controller	273915-B21
	Smart Array 641 Controller	291966-B21
	Smart Array 642 Controller	291967-B21
	256MB DDR, Battery-Backed Cache Upgrade Kit for SA-6400	273913-B21
	NOTE: This 256-MB Battery-Backed Cache Module supports the Smart Array 6400 series controllers, HP StorageWorks Modular Smart Array 1000 and the HP StorageWorks Modular Smart Array 500.	
	128MB BBWC for SA641/642	351580-B21
	NOTE: This 128 MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller.	
	64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter	268351-B21
	NOTE: Supports Wide Ultra3, Ultra320 SCSI drives only.	
	64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS	284688-B21

NOTE: Supports Wide Ultra3, Ultra320 SCSI drives only.
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/11943_na/11943_na.HTML
(HP Single Channel Ultra320 SCSI HBA)
http://h18000.www1.hp.com/products/quickspecs/12332_na/12332_na.HTML
(HP 8 Internal Port SAS HBA)
http://h18000.www1.hp.com/products/quickspecs/12067_na/12067_na.HTML
(Smart Array 641)
http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML
(Smart Array 642)
http://h18000.www1.hp.com/products/quickspecs/10429_na/10429_na.HTML
(SCSI Adapter)
http://h18000.www1.hp.com/products/quickspecs/11555_na/11555_na.HTML
(U320 Adapter)

Options

Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-B21
	HP NC370F PCI-X Multifunction 1000SX Gigabit Server Adapter	374193-B22
	HP NC370T PCI-X Multifunction 1000T Gigabit Server Adapter	374191-B22
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	HP NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter	313879-B21
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7170 PCI-X Dual Port Low Profile 1000T Gigabit Server Adapter	383738-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	NOTE: A minimum of 1 GB of memory is required for NC370x adapters, with a maximum of two NC370x adapters permitted in a server.	
	NOTE: Any NC61XX, NC71XX or NC77XX network adapter can be used for redundancy with the embedded NC7782 network adapter.	
	HP NC570C PCI-X Dual-port 4x Fabric Adapter	376158-B21
	HP NC571C PCI Express Dual-port 4x Fabric Adapter	376160-B21
HP 24-Port 4x Fabric Copper Switch	376227-B21	
HP 4x Fabric 1m Copper Cable	376232-B21	
HP 4x Fabric 3m Copper Cable	376232-B22	
HP 4x Fabric 5m Copper Cable	376232-B23	

Tape Drives

NOTE: For the complete listing of Tape Drive offerings for this server, please visit: <http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

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

USB Tape Drives

HP StorageWorks DAT 40 USB External Tape Drive (Carbon)	DW023A
HP StorageWorks DAT 72 USB External Tape Drive (Carbon)	DW027A

External and Rack-Mount Ultrium Tape Drives

HP StorageWorks Ultrium 232 Tape Drive, Internal (Carbonite)	DW064A
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NOTE: No internal tape drives fit inside this HP ProLiant server. The internal drive shown here is for the 1U and 3U Rack-mount Kit.

HP StorageWorks Ultrium 232 Tape Drive, External (Carbonite)	DW065A
HP StorageWorks Ultrium 448 Tape Drive, External (Carbonite)	DW017A
HP StorageWorks Ultrium 448 Rack-mount (Carbonite) - Single drive installed in a 1U rack-mount kit	DW028A

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

http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html

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>.

External, Rack-Mount, and Array Module DAT Drives

HP StorageWorks DAT 72 Tape Drive, External (Carbon)	Q1523A
HP StorageWorks 1U Rack-Mount Kit with one DAT 72 drive	A7443A

Options

NOTE: Please see the DAT Tape Drive QuickSpecs for controllers, media, and other options:

http://h18000.www1.hp.com/products/quickspecs/11883_na/11883_na.HTML

http://h18006.www1.hp.com/products/quickspecs/12128_na/12128_na.html

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

Rack-Mount Tape Drive Enclosures

HP StorageWorks 1U Rack-Mount Kit

A7445A

NOTE: The 1U Rack-mount Kit can support up to 2 half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT40, DAT72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, and Ultrium 448 tape drives.

NOTE: Please see the Rack-Mount Tape Drive Kits QuickSpecs for additional information regarding these kits:

http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML

Tape Autoloaders

DAT Autoloaders

HP StorageWorks DAT 72x6 Tape Autoloader, External

Q1567A

NOTE: Please see the DAT 72x6 Tape Autoloader QuickSpecs for additional options such as host bus adapters, controllers and media:

http://h18006.www1.hp.com/products/quickspecs/11905_na/11905_na.html

HP StorageWorks 1/8 Tape Autoloader

1/8 Ultrium 960 Tape Autoloader, Tabletop

AF204A

1/8 Ultrium 448 Tape Autoloader, Tabletop

AF203A

1/8 SDLT 320 Tape Autoloader, Tabletop

AA926A

1/8 Ultrium 232 Tape Autoloader, Tabletop

AF202A

1/8 DLT VS80 Tape Autoloader, Tabletop

C9264CB

1/8 Tape Autoloader Rackmount Kit

C9268R

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

NOTE: Please reference the 1/8 Tape Autoloader QuickSpecs at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at

<http://www.hp.com/go/ebs>

HP StorageWorks SSL1016 Tape Autoloader

SSL1016 Ultrium 460 Tape Autoloader

330821-B21

SSL1016 SDLT 320 Tape Autoloader

330816-B21

NOTE: Please reference the SSL1016 Tape Autoloader QuickSpecs at

<http://www.hp.com/go/automation> for additional information needed to create a complete solution; reference current compatibility information at

<http://www.hp.com/go/ebs>

Options

Tape Libraries

HP StorageWorks MSL6000 Tape Library

Ultrium 960 technology

MSL6030, 1 drive, 30 slots, Ultrium 960 AD606A

MSL6030, 1 drive, 30 slots, Ultrium 960, with embedded FC router AD608A

MSL6060, 2 drive, 60 slots, Ultrium 960 AD610A

MSL6060, 2 drive, 60 slots, Ultrium 960, with embedded FC router AD611A

SDLT 600 technology

MSL6026, 1 drive, 26 slots, SDLT 600 AD582A

MSL6026, 1 drive, 26 slots, SDLT 600, with embedded FC router AD584A

MSL6052, 2 drive, 52 slots, SDLT 600 AD587A

MSL6052, 2 drive, 52 slots, SDLT 600, with embedded FC router AD588A

Ultrium 460 technology

MSL6030, 1 drive, 30 slots, Ultrium 460 AD598A

MSL6030, 1 drive, 30 slots, Ultrium 460, with embedded FC router AD600A

MSL6060, 2 drive, 60 slot Ultrium 460 AD603A

MSL6060, 2 drive, 60 slot Ultrium 460, with embedded FC router AD604A

NOTE: Please reference the [MSL6000 Tape Library QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution; reference current compatibility information at <http://www.hp.com/go/ebs>

HP StorageWorks ESL E-Series Tape Libraries

ESL Extended 712e Tape Library, 0 drive, 712 LTO slots AA934B

ESL Extended 630e Tape Library, 0 drive, 630 SDLT slots AA935B

ESL Extended 322e Tape Library, 0 drive, 322 LTO slots AA939B

ESL Extended 286e Tape Library, 0 drive, 286 SDLT slots AA940B

NOTE: Please reference the [ESL E-Series Tape Libraries QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution. Reference current compatibility information at www.hp.com/go/ebs.

HP StorageWorks EML E-Series Tape Libraries

EML103eTape Library, 0 drive, 103 LTO slots AD560A

EML 245eTape Library, 0 drive, 245 LTO slots AD561A

NOTE: Please reference the [EML E-Series Tape Libraries QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution. Reference current compatibility information at www.hp.com/go/ebs.

HP StorageWorks Virtual Library Systems

HP 6105 Virtual Library System AD728A

HP 6510 Virtual Library System AD729A

NOTE: Please reference the [Virtual Library Systems QuickSpecs at http://www.hp.com/go/automation](http://www.hp.com/go/automation) for additional information needed to create a complete solution. Reference current compatibility information at www.hp.com/go/ebs.

Options

Magento-Optical Jukeboxes	HP StorageWorks 9.1 GB Entry-level Optical Storage	
	600mx, 4 drive, 64 slot jukebox	C1160M
	1200mx, 4 drive, up to 128 slots	C1104M
	2200mx, 6 drive, up to 238 slots	C1107M
	<p>NOTE: Please see the HP StorageWorks Magneto-Optical Products data sheet for a complete listing of available jukeboxes at: http://www.hp.com/products1/storage/products/archivalprod/brochures/MO_family_pb.pdf</p> <p>NOTE: Please reference the Magneto-Optical Jukebox data sheets at http://www.hp.com/go/optical for additional information needed to create a complete solution.</p>	
Ultra Density Optical Jukeboxes	HP StorageWorks Ultra Density Optical Storage	
	30ux standalone drive	AA961A
	700ux, 2 drive, 24 slot jukebox	AA963A
	1100ux, 2 drive, 38 slot jukebox	AA964A
	<p>NOTE: Please reference the Magneto-Optical Jukebox data sheets at http://www.hp.com/go/optical for additional information needed to create a complete solution.</p>	
HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20	335921-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	
	HP StorageWorks Modular Smart Array 20 Starter Kit	366172-B21
	NOTE: Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. NOTE: The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 1" Hot Plug Hard Drives.	
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB	302969-B21
	NOTE: Rack-mountable 14 drive enclosure with single bus, redundant power supplies	
	HP StorageWorks Modular Smart Array 30 DB	302970-B21
	NOTE: Rack-mountable 14 drive enclosure with dual bus, redundant power supplies NOTE: The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 1" Hot Plug Hard Drives.	
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2	335880-B21
	NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML	

Options

HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 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	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf NOTE: Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: http://www.hp.com/go/MSA1500cs	AA986A
StorageWorks Options	StorageWorks 2 Gb, 64-bit/133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows 2000, Windows Server 2003 and Linux NOTE: FCA2214 2 Gb Fibre Channel Host Bus Adapter is a single channel, 64-bit/133 MHz PCI-X-to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface.	281541-B21
	FCA2408 - HP StorageWorks 2 Gb, 64-Bit/133 MHz Single Channel, PCI- X-to-Fibre Channel Host Bus Adapter for Windows® 2000 and Windows Server® 2003 NOTE: FCA2408 HP StorageWorks 2 Gb, 133 MHz PCI-X-to-Fibre Channel Host Bus Adapter (HBA) with optical small-form-factor (SFF) (LC) interface.	343073-B21
	FCA2404DC - HP StorageWorks 2 Gb, Dual Channel, 133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows® 2000, and Windows Server 2003 NOTE: FCA2404DC HP StorageWorks 2 Gb Fibre Channel Host Bus Adapter is a dual channel, 133 MHz, PCI-X to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface.	323264-B21
	FCA2404 - StorageWorks 2 Gb, single channel, 133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for Windows 2000, Windows NT and Windows Server 2003 NOTE: FCA2404 StorageWorks 2 Gb, Fibre Channel Host Bus Adapter is a single channel, multi-path failover, 133 MHz, PCI-X to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface for ProLiant Server connects.	305573-B21
	StorageWorks 2 Gb, Dual Port, 64-Bit/133 MHz PCI-X-to-Fibre Channel Host Bus Adapter for W2K, Windows Server 2003 and Linux NOTE: FCA2214DC StorageWorks 2 Gb Dual Port, Fibre Channel Host Bus Adapter is a 64-bit/133 MHz, PCI-X-to Fibre Channel Host Bus Adapter (HBA) with an embedded multi-mode optical interface.	321835-B21
	StorageWorks SAN Switch 2/16-EL Upgrade	325889-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 NOTE: Please see the Modular Smart Array 500 Generation 2 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML	335880-B21

Options

Uninterruptible Power Systems – Rack UPS	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage	326529-D71
	HP UPS R1500 XR (1440VA, 1340 Watt), Low Voltage	204404-001
	HP UPS R3000 XR (2880VA, 2700 Watt), Low Voltage	192186-001
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage	192186-002
	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage	326529-D71
	HP UPS R12000 XR, N+ x (12KVA, 12KW) High Voltage	207552-B22
	NOTE: The UPS R12000 XR has a hardwired input and output connection.	

USB Options	USB Optical Scroll Mouse (Carbonite)	DD441B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	256MB HP Drive Key II (USB 2.0)	PH657A

ProLiant DL320 Deployment Options	Rack Adapter Kit	332815-B21
	NOTE: This kit allows HP rack servers to fit in racks that are 24" wide. NOTE: Telco Rack Support - Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions: http://www.racksolutions.com/hp	

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21
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Rack Options for Rack 5000 Series	Stabilizer Kit for 5642 Rack (Graphite Carbon)	374493-B21
	NOTE: The stabilizing kit is used to prevent rack from tipping over. Baying Kit for 5642 Rack (Graphite Carbon)	374499-B21
NOTE: The baying kit is used to join two or more HP 5642 racks.		

HP Rack 10000 Series (Graphite Metallic)	10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
	10642 (42U) Infrastructure Rack (High Voltage)	379005-001
	HP S10614 (14U) Rack Cabinet – Shock Pallet	292302-B22
	HP 10842 (42U, 800mm wide) Rack Cabinet – Pallet	257415-B21
	HP 10842 (42U, 800mm wide) Rack Cabinet – Shock Pallet	257415-B22
	HP 10647 (47U) Rack Cabinet – Pallet	245160-B21
	HP 10647 (47U) Rack Cabinet – Shock Pallet	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	

Options

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.

NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color:

http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML

NOTE: For additional information regarding Rack Cabinets, please see the following URL: <http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/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
	TFT7210R Rack Mounted 17" Monitor	348373-B21
	NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/ .	
	TFT5600 Rack Keyboard Monitor	221546-001
	NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/ .	
	1U Rack Keyboard & Drawer (Carbon)	257054-001
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 KVM Switch Options	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	IP Console Switch Box (KVM/IP), 1 x 1 x 16	262585-B21
	IP Console Switch Box (KVM/IP), 3 x 1 x 16	262586-B21
	HP 1x4 USB/PS2 KVM Switch, RM	371302-B21
	HP 1x4 USB/PS2 KVM Switch, TT	371301-D71
	PS/2 Interface Adapter, 8 pack	262587-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	CAT5 KVM Expansion Module	262589-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21
	CAT5e Cable 3', 4 pack	263474-B21
	CAT5e Cable 6', 8 pack	263474-B22
	CAT5e Cable 12', 8 pack	263474-B23
	CAT5e Cable 20', 4 pack	263474-B24
	CAT5e Cable 40', 1 pack	263474-B25

Options

NOTE: For additional information regarding HP KVM Switches and options, please see the following URL:

<http://h18004.www1.hp.com/products/servers/proliantstorage/rack-options/list.html#console>

Service and Support Offerings (HP Care Pack Services)	Hardware Services On-site Service	
	Next Business Day On-site Service, 5-Day x 9-Hour Coverage, 3 Years, Electronic	U4479E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4480E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4481E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4482E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4490E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4491E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4492E
	Support Plus 24	
	Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4493E
	Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic.	U6309E
Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic.	U8331E	
NOTE: For more information, customer/resellers can contact http://www.hp.com/hps/		

Memory

HP ProLiant DL320 G3 All Models

Standard Memory

512 MB PC3200 ECC DDR SDRAM installed (1 x 512 MB SDRAM DIMM) on Celeron model; 1GB (1 x 1024 MB SDRAM DIMMs) on all P4 models.

Standard Memory Plus Optional Memory

Up to 4096 MB memory is available with the optional installation of PC3200 ECC DDR SDRAM Memory kits.

NOTE: The chart below represents the P4 models with 1GB standard memory, and does not represent all possible configurations. Memory can be populated in any order with any of the supported DIMMs listed. For optimal performance, the total amount of memory in slots 1A and 2A should equal to the total amount of memory in slots 3B and 4B.

Memory		Slot			
		1A	2A	3B	4B
Standard	1024 MB	1024 MB	Empty	Empty	Empty
Optional	2048 MB	512 MB	512 MB	512 MB	512 MB
Maximum	4,096 MB	1024 MB	1024 MB	1024 MB	1024 MB

Following are memory options available from HP:

- 1024 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 1024 MB) 354563-B21
- 512 MB of Advanced ECC PC3200 DDR SDRAM DIMM Memory Kit (1 x 512 MB) 354560-B21

Storage



- 1- 2 Two 3.5" x 1" SATA or SCSI non-hot plug drive bays
- A Removable 1.44 MB Diskette Drive Assembly Kit
- B Optional CD-ROM/DVD Drive Assembly Kit

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
1.44-MB Diskette Drive	Up to 1	A	Integrated
Low-profile IDE (ATAPI) CD-ROM Drive	Up to 1	B	Integrated IDE (ATAPI)
Low-profile IDE DVD-ROM Drive	Up to 1	B	Integrated IDE

Hard Drives

Ultra320 SCSI Non-Hot Plug Drives

	Quantity Supported	Position Supported	Controller
1-inch			
72.8-GB 10,000 rpm 36.4-GB 15,000 rpm	Up to 2	1-2	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 Smart Array 5304/128 Controller Smart Array 5304/256 Controller 64-bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

SAS Drives

3.5"	Quantity Supported	Position Supported	Controller
36 GB 15,000 rpm 72 GB 15,000 rpm	Up to 2	1-2	HP 8 Internal Port SAS HBA with RAID

Serial ATA Drives

1-inch	Quantity Supported	Position Supported	Controller
250-GB 7,200 rpm 160-GB 7,200 rpm 80-GB 7,200 rpm	Up to 2	1-2	HP embedded 2 Port SATA Controller with RAID 0/1 support

Storage

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
Modular Smart Array 20	Please see the Modular Smart Array 20 QuickSpecs below to determine configuration requirements	External	Please see the Modular Smart Array 20 QuickSpecs below see the list of supported controllers
Modular Smart Array 30 Family	Up to 14	External	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 G2	1	External	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_na/11033_na.HTML

Maximum Storage Capacity - (Enclosure with SCSI models)

Internal	145.6 GB (2 x 72.8 GB 1" SCSI)
External	4.20 TB (1 x (14 x 300 GB 1" Ultra320 Drives))
Total	4.35 TB

NOTE: In order to implement integrated SATA RAID with Smart Start 7.2, purchase of floppy drive is required.

Maximum Storage Capacity - (SATA Enclosure with SATA models)

Internal	500 GB (2 x 250 GB 1" SATA)
External	3.00 TB (1 x (12 x 250 GB 1" SATA Drives))
Total	3.50 TB

NOTE: In order to implement integrated SATA RAID with Smart Start 7.2, purchase of floppy drive is required.

NOTE: The External capacity section relates to the HP StorageWorks Modular Smart Array 20.

Tape Drives, Tape Autoloaders & Tape Libraries

Storage

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html

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

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

For details on connecting tape drives to this server, see the following:

	Quantity Supported	Position Supported	Controller
HP StorageWorks Tape Drives, USB External DAT 24 USB DAT 40 USB DAT 72 USB	1 per USB port	External	USB port
HP StorageWorks Tape Drives, External Ultrium 215 Ultrium 230 Ultrium 232 Ultrium 448 Ultrium 460 DAT 40 DAT 72 DLT VS80 DLT VS160 SDLT 320	Up to 2	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Tape Drives, External Ultrium 960 SDLT 600	1 per SCSI Channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Autoloaders, External DAT 72x6 Tape Autoloader 1/8 Tape Autoloader SSL1016 Tape Autoloader	1 autoloader per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks Rack-mount Tape Drive Enclosures 1U Rack-Mount Kit 3U Rack-Mount Kit 5U Rack-Mount Kit	1 per SCSI channel	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

Storage

HP StorageWorks Tape Libraries, External MSL6000 (Ultrium 960-based) MSL6000 (SDLT 600-based) MSL6000 (Ultrium 460-based) MSL5026S2 (SDLT 320-based) MSL5052S2 (SDLT 320-based)	Please reference the MSL Tape Library QuickSpecs to determine configuration requirements	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS
HP StorageWorks ESL E-Series Tape Libraries ESL 712e ESL 630e ESL 322e ESL 286e	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements	External	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements
HP StorageWorks EML E-Series Tape Libraries EML 103e EML 245e	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements	External	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements
HP StorageWorks Virtual Library System 6105 VLS 6510 VLS	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements	External	Please reference the ESL E-series Tape Libraries QuickSpecs to determine configuration requirements

Technical Specifications

System Unit	Dimensions (HxWxD)	1.70 x 16.78 x 24.0 in (4.32 x 42.62 x 60.96 cm)	
	Weight (no drives installed)	24.0 lb (10.91 kg)	
	Weight (fully configured with two hard drives, four DIMM modules, and a PCI expansion board)	27.0 lb (12.27 kg)	
	Input Requirements	Range Line Voltage	90 to 264 VAC
		Nominal Line Voltage	100 to 120 VAC/220 to 240 VAC
		Rated Input Current	6 A (100 to 120 VAC) to 3 A (200 to 240 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	@ 115V input, Rated input power = 486W (assume output wattage=350W) @ 230V input, Rated input power = 479W (assume output wattage=350W)
		Power Supply Output	Steady State Power
			NOTE: 1. +3.3V and +5V total O/P power 130W Maximum. 2. +3.3V, +5V and +12V total O/P power 324W Maximum.
Environmental Operating	Operating	Ambient Temperature	50° to 95° F (10° to 35° C)
		Temperature Derating	1.8° F per 1000 ft to 10,000 ft (1° C per 300 m to 3000 m)
		Relative Humidity	10% to 90% (non-condensing)
		Maximum wet bulb temperature	82° F (28° C)
	Non-operating Storage	Temperature	-22° to 140° F (-30 to 60° C)
		Relative Humidity	5% to 95% (non-condensing)
Maximum wet bulb temperature		102° F (38.7° C)	
Non-operating Shipping	Temperature	-22° to 140° F (-30 to 60° C)	
	Relative Humidity	5% to 95% (non-condensing)	
	Maximum wet bulb temperature	102° F (38.7° C)	

Technical Specifications

Acoustic Noise	Idle at 23 degree C ambient (Fixed Disk Drives Spinning)	
	L WAd (BELS)	=6.4
	Bystander L pAm (dBA)	=47
	Operating (Random Seeks to Fixed Disks)	
	L WAd (BELS)	=6.4
	Bystander L pAm (dBA)	=47

Serial ATA Hard Drives	80 GB 7.2K 349237-B21	Capacity	80,000 MB	
		Height	1.028 in/2.611cm	
		Width	4.0 in (10.16 cm)	
		Interface	Serial ATA	
		Transfer Rate Synchronous (Maximum)	1.5 Gb/s	
		Seek Time (typical reads, including settling)	Single Track	0.9 ms
			Average	9.0 ms
			Full-Stroke	17.0 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
	Logical Blocks		156,301,488	
	Operating Temperature	41° to 131° F (5° to 55° C)		

Power Supply	Input voltage specifications	Rated input voltage	100 VAC to 240 VAC
		Input Specifications	Rated input line
		Frequency range	47 to 63 Hz
		Rated input power	@ 115V input, Rated input power = 486W (assume output wattage=350W) @ 230V input, Rated input power = 479W (assume output wattage=350W)
		Rated input current	6 A, 3 A (110 V, 220 V)
		Steady state power	350W (rated)
		BTU Rating	1710 BTU/hr
	Ambient temperature range	Operating	50° to 118° F (10° to 48° C)
		Non-operating	-40° to 158° F (-40° to 70° C)
	Relative humidity (non-condensing)	Operating	55% to 85%
		Non-operating	5% to 95%

Technical Specifications

Dielectric voltage withstand	Input to output	1800 VAC/minute
	Input to ground	1800 VAC/minute
Maximum Wet Bulb Temperature	41.3C	

Embedded NC7782 Dual Port NIC	Network Interface	10Base-T/ 100Base-TX/ 1000Base-TX
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX
	Data Transfer Method	64-bit/100MHz PCI-X
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s 10Base-T (Full-Duplex) 20 Mb/s 100Base-TX (Half-Duplex) 100 Mb/s 100Base-TX (Full-Duplex) 200 Mb/s 1000Base-TX (Half and Full-Duplex) 2000Mb/s
	Connector	RJ-45
	Cable Support	10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m) 10/100/1000Base-TX Category 5 UTP; up to 328 ft (100 m)

Integrated Dual Channel Serial ATA Controller	Simultaneous drive transfer channels	2 channels
	Transfer rate synchronous (maximum theoretical)	150 MB/s per channel; 300MB/s in RAID 0 pair
	Data transfer method	Intel® 82801FR Integrated Serial ATA Host Controller (non-RAID mode) Intel® 82801FR Integrated Serial ATA Host Controller (RAID Mode)
	Drive support	Serial ATA
	Data transfer modes	Legacy Mode Combined Mode
	Protocol	Serial ATA
	Feature	NCQ (Native Command Queuing);AHCI (Advanced Host Controller Interface)

Technical Specifications

Integrated Serial ATA Controller	Transfer rate synchronous (maximum)	150 MB/s per channel; 300MB/s in RAID 0 pair
	Protocol	Serial ATA
	Drive support	HP Universal Serial ATA
	Data transfer modes	ATA data-transfer modes supported SATA 1.0, SATA II PIO modes 0-4 Multiword DMA modes 0-2 Ultra DMA modes 0-6
RAID levels		0, 1
Feature		Supports Pre-Failure Warranty of SATA Hard Drives Support for Systems Insight Manager Supports multiple logical volumes Setup through ROM based Array Configuration Utility Installation scripting support
OS Support		Microsoft Windows 2000 Server Microsoft Windows Server 2003 Novell NetWare Linux (Red Hat, SuSE, UnitedLinux)

NOTE: This controller does not support LED functions
This controller does not support Hot Plug functions

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