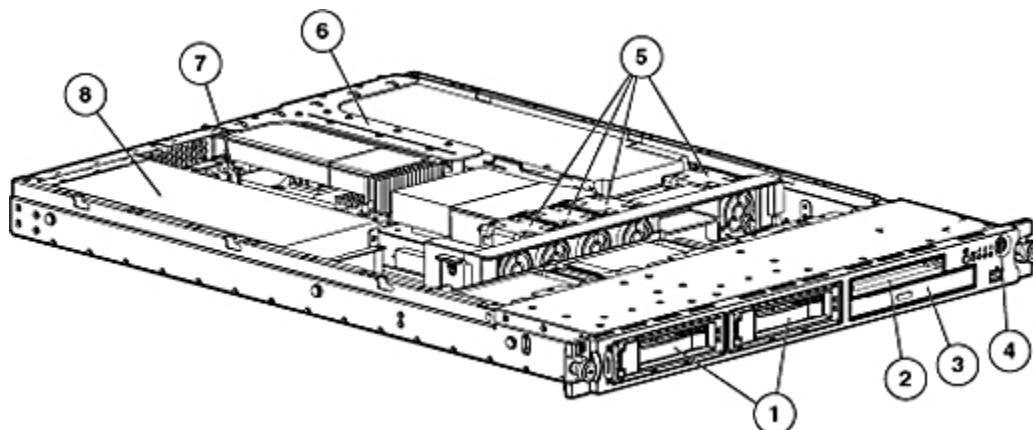


### Overview



- |  |   |
|--|---|
| 1. Support for up to two Hot Plug or Non Hot Plug SATA or SAS Hard Drives      | 5. Non Hot Plug Dual Rotor Fans with N+1 Redundancy     |
| 2. Optional Floppy Drive Assembly Option Kit or Optional Front Video Connector | 6. Two PCI Slots (2 PCI-Express x8 connectors standard) |
| 3. Optional CD-ROM, DVD-ROM, or DVD-RW Drive                                   | 7. Four PC2-5300 ECC DDR2 Memory Slots                  |
| 4. Power Button, UID Button, and Front LED Indicators                          | 8. Power Supply (420 Watt)                              |

### At a Glance

#### • Processor:

- Dual-Core Intel® Xeon® 3000 processor sequence, or
- Dual-Core Pentium D 800 series processor, or
- Single core Pentium 4 600 series processor, or
- Single core Celeron D processor
- Intel 3000 Chipset with up to 1066MHz Front Side Bus (FSB)

#### • Memory:

- Supports up to 8 GB of PC2-5300 (667 MHz) Unbuffered DDR2 ECC SDRAM Memory
- 4 DIMM sockets

#### • Storage Controller:

- 2 Port SATA Controller with RAID 0/1 support

#### • Internal Drive Support:

- Up to two 3.5" (Large Form Factor) SATA or SAS hard drives
  - SAS drives require optional SAS Host Bus Adapter (HBA)
  - Optional hot plug hard drive configuration
- Internal storage capacity of up to 1.5TB (2 x 750GB SATA hard drives)
- Optional CD, DVD, or DVD-RW drive
- Optional Floppy Drive Assembly Option Kit

#### • Network Controller:

- Integrated NC324i PCI Express Dual Port Gigabit Server Adapter

#### • Expansion Slots:

- Two total slots:
  - (1) Full length PCI Express x8 slot (x8 connector)
    - Can be replaced with a full-length 64-bit /133MHz PCI-X slot
  - (1) Half-length, low-profile PCI Express x1 slot (x8 connector)

#### • USB 2.0 Ports:

- 4 Total: (1) front; (1) internal; (2) rear accessible ports
- Internal USB port for flexible storage, security, or USB drive key deployment

#### • Redundancy:

- 4 dual rotor internal fans with N+1 redundancy

#### • Management:

### Overview

- Embedded Integrated Lights Out 2 (iLO 2) Remote Management with full sideband (UMP) support and Embedded Health
- HP ProLiant Essentials Foundation Pack, including HP Systems Insight Manager, SmartStart, Rapid Deployment Pack
- Front Panel status LEDs including system health and UID
- **Form Factor:**
  - 1U (1.70" / 4.32 cm) Rack Mount Chassis
  - 24.0" (60.96 cm) Deep
  - Spring-loaded universal sliding rails included with all models
- **Warranty:**
  - Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty (three year parts, one year labor, one year on-site support). Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SAS hard drives. SATA hard drives have a one-year warranty.

Standard Features

<b>Processor</b> <a href="#">One of the following depending on Model</a>	Dual-Core Intel Xeon processor 3060 (2.40 GHz, 4MB L2 Cache, 65 Watts, 1066MHz Front Side Bus (FSB))
	Dual-Core Intel Xeon processor 3050 (2.13 GHz, 2MB L2 Cache, 65 Watts, 1066MHz FSB)
	Dual-Core Intel Xeon processor 3040 (1.86 GHz, 2MB L2 Cache, 65 Watts, 1066MHz FSB)
	Dual-Core Intel Pentium D processor 820 (2.8 GHz, 2x1MB L2 Cache, 95 Watts, 800MHz FSB)
	Single-Core Intel Pentium 4 processor 651 (3.4 GHz, 2MB L2 Cache, 86 Watts, 800MHz FSB)
	Intel Celeron D processor 352 (3.2GHz, 512KB L2 Cache, 86 Watts, 533MHz FSB)

<b>Cache Memory</b> <a href="#">One of the following depending on Model</a>	4MB L2 Cache (for Models with Intel Xeon processor 3060)
	2MB L2 Cache (for Models with the Intel Xeon processor 3040 and 3050)
	2x1MB L2 Cache (for Models with the Intel Pentium-D processor 820)
	2MB L2 Cache (for Models with the Intel Pentium-4 processor 651)
	512KB L2 Cache (for Models with the Intel Celeron-D processor 352)

<b>Chipset</b>	Intel 3000 Chipset
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<b>Memory Protection</b>	Advanced ECC
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<b>Memory</b> <a href="#">One of the following depending on Model</a>	Type	PC2-5300 (667MHz) Unbuffered ECC DDR2 SDRAM Interleaving optional (Enabled when DIMMs populated in pairs)
	DIMM Sockets	4
	Standard – Celeron D Model	512 MB (1 x 512 MB)
	Standard – Xeon Models	1 GB (1 x 1 GB)
	Maximum Memory	8 GB

<b>Network Controller</b>	Embedded NC324i PCI Express Dual Port Gigabit server adapter
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Expansion Slots	Slot Number	Bus Speed	Height	Hot Plug	PCI Voltage
<b>PCI-Express Non Hot-Plug Riser</b> (Standard)	2	PCI Express x8 (x8 connector)	Full	no	
	1	PCI Express x1 (x8 connector)	Half	no	
<b>PCI-X Non Hot-Plug Riser</b> (Optional)	2	64-bit/133 MHz PCI-X	Full	no	3.3 Volt
	1	PCI Express x1 (x8 connector)	Half	no	

<b>Storage Controllers</b>	Integrated Intel 82801GR Serial ATA Host Controller with RAID 0/1 support. Hot Plug SAS and SATA controllers available via PCI card option.
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Standard Features

Storage	Diskette Drive	Optional Floppy Drive Assembly Option Kit is available	
	Optical Drive	Optional CD-ROM, DVD-ROM, & DVD-RW option kits available	
	Hard Drives	Hard Drives – Non Hot Plug SATA	Up to 2 non-hot plug SATA 3.5” drives
	One of the following depending on Model	Hard Drives – Hot Plug SATA/SAS	Up to 2 hot plug SATA or SAS 3.5” drives <b>NOTE:</b> Requires optional PCI card.
Maximum Internal Storage Type	SATA	1.5TB	2 x 750GB SATA
	SAS	600GB	2 x 300GB SAS
Interfaces	Serial	1	
	USB 2.0	4 (1 front, 1 internal, 2 rear) <b>NOTE:</b> Please see the following URL for additional information regarding USB support: <a href="http://h18004.www1.hp.com/products/servers/platforms/usb-support.html">http://h18004.www1.hp.com/products/servers/platforms/usb-support.html</a>	
	Graphics	1 (rear) (Optional second video connector in front)	
	Keyboard	1	
	Mouse	1	
	Network RJ-45	2	
	iLO 2 remote management port	1	
Graphics	Integrated ATI ES1000 Video Controller with 16 MB SDRAM Video Memory		
Form Factor	Rack (1U), (1.70 in/4.45 cm), 24.0” deep		
ProLiant Essentials Foundation Pack Software	HP Systems Insight Manager	HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible environment to centrally manage servers, storage and other infrastructure devices across multiple operating system platforms.	
		Through a single management view, HP SIM provides core management services that include device discovery and identification, event views, health monitoring, inventory data collection, software version control and reporting. HP SIM is built on industry standards and is extensible with value-added ProLiant Essentials, Integrity Essentials and Storage Essentials software to meet individual management needs. For more details on HP SIM visit <a href="http://www.hp.com/go/hpsim">http://www.hp.com/go/hpsim</a> .	
		HP SIM provides organizations with the following benefits:	
		<ul style="list-style-type: none"><li>• Simplifies and consolidates infrastructure lifecycle management using task and query based functionality</li><li>• Provides the foundation for infrastructure automation and virtualization</li><li>• Enables IT management based on business processes not hardware platforms</li><li>• Lowers infrastructure maintenance cost and frees resources for</li></ul>	

### Standard Features

	<p>innovation</p> <ul style="list-style-type: none"><li>• Maximizes resource utilization with virtualization technologies</li><li>• Provides a central point of integration between infrastructure and Enterprise management tools such as HP OpenView</li></ul>
SmartStart	<p>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 <a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a>.</p> <p>SmartStart version supported (minimum): SmartStart 7.51.</p>
Insight Management Agents	<p>Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers,</p> <p>Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack. For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at <a href="http://www.hp.com/servers/manage">http://www.hp.com/servers/manage</a>.</p>
Subscriber's Choice	<p>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 <a href="http://www.hp.com/go/subscriberschoice">http://www.hp.com/go/subscriberschoice</a> and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.</p>
ROMPaq, support software, and configuration utilities	<p>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 <a href="http://www.hp.com/servers/smartstart">http://www.hp.com/servers/smartstart</a>.</p>
Survey Utility and diagnostics utilities	<p>The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.</p>

### Standard Features

#### Optional ProLiant Essentials Value Packs

Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Rapid Deployment Pack (RDP) is an automated deployment and provisioning solution for all ProLiant servers. RDP includes the ProLiant Integration Module featuring ProLiant server pre-configured events for OS installation, and optimized software drivers, firmware and management agents. Every RDP disc includes 10-node trial licenses for evaluation purposes. RDP requires a license for each server deployed and is available for purchase with HP servers. For more information, visit: <http://www.hp.com/servers/rdp>.
- Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows® 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant Server.
- Performance Management Pack – 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, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.
- Vulnerability and Patch Management Pack – identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats.
- Virtual Machine Management Pack – provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.
- Server Migration Pack – The Server Migration Pack automates the manual processes required for migrating servers between physical or virtual platforms (P2V, V2P, and V2V)
- Integrated Lights-Out Advanced Pack - upgrades the Integrated Lights-Out processor to full virtual presence and control with graphical console and virtual media.

#### Optional Remote Management Packs

**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 3.0 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, SAS hard drives, and memory) Front and Rear Unit ID (UID) button/LED
Security	Power-on password Keyboard password Diskette drive control Diskette boot control USB Port control Removable CD-ROM/Diskette Drive Assembly Administrator's password
Server Power Cords	One 6' Lowline and one 6' Highline (IEC-IEC) power cord ships standard
Power Supply	Auto-sensing 420-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: <a href="ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf">ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf</a> .
System Fans	4 dual rotor fans ship standard. 4 dual rotor fans total supported internally. N+1 Redundancy (1 rotor only).
Ultra Thin Rack Deployment Overview	For the Ultra Thin Rack Deployment Overview, including best practices for the HP ProLiant DL320 G5, please see the following URL: <a href="http://www.hp.com/products/servers/ProLiantdl320/">http://www.hp.com/products/servers/ProLiantdl320/</a> .
Required Cabling	For required cabling information, refer to the Web site at: <a href="http://www.hp.com/products/servers/ProLiantdl320/">http://www.hp.com/products/servers/ProLiantdl320/</a> .



### Standard Features

#### OS Support

Windows Server 2003 (web, standard, and enterprise editions; standard and enterprise editions for 64-bit extensions)

Red Hat Linux (RHEL3, RHEL4)

SuSE Linux (SuSE Enterprise Server 9, Enterprise Server 10)

**NOTE:** Support differences will exist between the SATA and SAS 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>

#### 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>.

#### 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, EVA, XP, rackable tape libraries and configurable network switches.

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



### Standard Features

#### Service and Support

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

**NOTE:** Server Warranty includes 3 year Parts, 1 year Labor, 1-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

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

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

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

Extended Care – Minimum recommended service support offer designed to ensure customers have access to expert assistance, whenever they need it.

- *4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Committed Care – Cost-effective service options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem resolution.

- *6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years*

Committed Response – Highest HP Support service level recommend to help increase IT performance and availability with comprehensive, consistent hardware and software services

- *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*

Deployment Services – HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers – and free customers people to focus on what they do best, their business.

- *Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.*

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

Models

<b>DL320 G5 C352 / 512MB</b> 418043-001	<b>Processor</b>	Intel Celeron D processor 352 with EM64T (3.2 GHz, 86 Watts, 533MHz FSB)
	<b>Cache Memory</b>	512KB L2 Cache
	<b>Chipset</b>	Intel 3000 chipset
	<b>Memory</b>	512 MB (Standard) to 8 GB (Maximum) of Advanced ECC PC2-5300 Unbuffered DDR2 SDRAM Memory
	<b>Network Controller</b>	Embedded NC324i PCI Express Dual Port Gigabit server adapter
	<b>Storage Controller</b>	Intel® 82801GR Integrated Serial ATA Host Controller
	<b>Hard Drives</b>	None ship standard
	<b>Maximum Internal Storage</b>	1.5TB with SATA drives, 600GB with SAS drives (SAS requires optional PCI controller)
	<b>Optical Drive</b>	Optional
	<b>Diskette Drive</b>	Optional
	<b>Form Factor</b>	Rack (1U), (1.70 in/4.45 cm)

<b>DL320 G5 X3050 / 1GB / 80GB SATA HDD</b> 418044-001	<b>Processor(s)</b>	Dual-Core Intel Xeon 3050 processor (2.13 GHz, 65 Watts, 1066MHz FSB)
	<b>Cache Memory</b>	2MB L2 Cache
	<b>Chipset</b>	Intel 3000 chipset
	<b>Memory</b>	1 GB (Standard) to 8 GB (Maximum) of Advanced ECC PC2-5300 Unbuffered DDR2 SDRAM Memory
	<b>Network Controller</b>	Embedded NC324i PCI Express Dual Port Gigabit server adapter
	<b>Storage Controller</b>	Intel® 82801GR Integrated Serial ATA Host Controller
	<b>Hard Drives</b>	HP 80GB 1.5G SATA 7.2K NHP 3.5" HDD
	<b>Maximum Internal Storage</b>	1.5TB with SATA drives, 600GB with SAS drives (SAS requires optional PCI controller)
	<b>Optical Drive</b>	Optional
	<b>Diskette Drive</b>	Optional
	<b>Form Factor</b>	Rack (1U), (1.70 in/4.45 cm)

<b>DL320 G5 X3060 / 1GB</b> 418045-001	<b>Processor(s)</b>	Dual-Core Intel Xeon 3060 processor (2.4 GHz, 65 Watts, 1066MHz FSB)
	<b>Cache Memory</b>	4MB L2 Cache
	<b>Chipset</b>	Intel 3000 chipset
	<b>Memory</b>	1 GB (Standard) to 8 GB (Maximum) of Advanced ECC PC2-4200 UB DDR2 SDRAM Memory
	<b>Network Controller</b>	Embedded NC324i PCI Express Dual Port Gigabit server adapter
	<b>Storage Controller</b>	Intel® 82801GR Integrated Serial ATA Host Controller
	<b>Hard Drives</b>	None
	<b>Maximum Internal Storage</b>	1.5TB with SATA drives, 600GB with SAS drives (SAS requires optional PCI controller)
	<b>Optical Drive</b>	Optional
	<b>Diskette Drive</b>	Optional
	<b>Form Factor</b>	Rack (1U), (1.70 in/4.45 cm)



Models

<b>DL320 G5 X3060 / 1GB / 160GB SATA HDD</b> 418046-001	<b>Processor(s)</b>	Dual-Core Intel Xeon 3060 processor (2.4 GHz, 65 Watts,1066MHz FSB)
	<b>Cache Memory</b>	4MB L2 Cache
	<b>Chipset</b>	Intel E7230 chipset with 800MHz Front Side Bus
	<b>Memory</b>	1 GB Standard to 8 GB (Maximum) of Advanced ECC PC2-5300 Unbuffered DDR2 SDRAM Memory
	<b>Network Controller</b>	Embedded NC324i PCI Express Dual Port Gigabit server adapter
	<b>Storage Controller</b>	Intel® 82801GR Integrated Serial ATA Host Controller
	<b>Hard Drives</b>	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD
	<b>Maximum Internal Storage</b>	1.5TB with SATA drives, 600GB with SAS drives (SAS requires optional PCI controller)
	<b>Optical Drive</b>	Optional
	<b>Diskette Drive</b>	Optional
	<b>Form Factor</b>	Rack (1U), (1.70 in/4.45 cm)

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.

**NOTE:** FIO indicates that this option only available as a Factory Installable Option.

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

Models	DL320G5 CTO (Configure-To-Order) Chassis	419405-B21
	<b>Includes:</b>	
	Embedded NC324i PCI Express Dual Port Gigabit server adapter	
	1 full length PCI Express x8 slot and 1 half length low profile PCI Express x8 slot	
	Integrated Lights-Out 2 (iLO 2) embedded	
	Intel® 82801GR Integrated Serial ATA Host Controller	
	Rack (1U) form factor, (1.70 in/4.45 cm)	
	Spring-loaded universal sliding rack rails	

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

Processors	Intel Celeron-D 352 processor FIO Kit	419402-L21
	Dual-Core Intel Xeon 3060 processor FIO Kit	419398-L21
	Dual-Core Intel Xeon 3050 processor FIO Kit	419400-L21
	Dual-Core Intel Xeon 3040 processor FIO Kit	433928-L21
	Single core Intel Pentium-4 651 processor FIO Kit	433930-L21
	Dual-Core Intel Pentium-D 820 processor FIO Kit	433929-L21
Memory	2 GB Unbuffered PC2-5300 ECC DIMM (1 x 2 GB)	432806-B21
	1 GB Unbuffered PC2-5300 ECC DIMM (1 x 1 GB)	432804-B21
	512 MB Unbuffered PC2-5300 ECC DIMM (1 x 512 MB)	432803-B21

Step 3: Choose Additional Factory Integratable Options

Floppy Drive Bay	Floppy Drive Assembly Option Kit	372702-B21
	DL320 G5 Front VGA Connector	419559-B21
	<b>NOTE:</b> The Front VGA Connector is installed in the floppy drive bay. You cannot install both a Floppy Drive and a Front VGA Connector.	
Optical Drive	DVD+/-RW Drive Assembly Option Kit	395498-B21
	DVD-ROM Drive Assembly Option Kit	374303-B21
	CD ROM Drive Option Assembly Option Kit	372703-B21
PCI-X Slot Option	DL320 G5 PCI-X Option Kit	419557-B21
	<b>NOTE:</b> The DL320 G5 ships standard with a riser board assembly that has two connectors:	
	<ul style="list-style-type: none"><li>• Full-length PCI Express connector (x8 connector, x8 bus speed)</li><li>• Half-length PCI Express connector (x8 connector, x1 bus speed)</li></ul>	
	The DL320 G5 PCI-X Option Kit replaces the Full-Length PCI Express connector with a full-length 64-bit / 133MHz PCI-X connector.	
Controllers	64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
	<b>NOTE:</b> For External Drive use only	

Configuration Information - Factory Integrated Models

	HP 8 Internal Port SAS HBA with RAID 0/1	347786-B21
	<b>NOTE:</b> The HP 8 Internal Port SAS/SATA HBA with RAID (0,1) requires the purchase of the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21)	
	DL320 Hot Plug SAS/SATA Cable Option Kit	398307-B21
	HP SC11Xe Host Bus Adapter	412911-B21
	HP Smart Array E200/64MB Controller	409180-B21
	HP Smart Array E200/128 BBWC Controller	411508-B21
	HP Smart Array P400/256MB Controller	405132-B21
	HP Smart Array P400/512MB BBWC Controller	411064-B21
	Smart Array 6402/128 Controller	273915-B21
	<b>NOTE:</b> For External Drive use only	
	Smart Array 6404/256 Controller	273914-B21
	<b>NOTE:</b> For External Drive use only	
	Smart Array 642 Controller	291967-B21
	<b>NOTE:</b> For External Drive use only	
Hard Drives	<b>NOTE:</b> Choose 0, 1, or 2 hard drives.	
	<b>Serial Attached SCSI (SAS)</b>	
	HP 300GB 3G SAS 15K 3.5" SP HDD	431944-B21
	HP 146GB 3G SAS 15K 3.5" SP HDD	375872-B21
	HP 72GB 3G SAS 15K 3.5" SP HDD	375870-B21
	HP 36GB 3G SAS 15K 3.5" SP HDD	375868-B21
	<b>NOTE:</b> SAS Hard Drives require a SAS controller. The DL320 G5 embedded SATA controller does not support SAS hard drives.	
	<b>Serial ATA (SATA)</b>	
	HP 750GB 1.5G SATA 7.2K 3.5" HDD	432341-B21
	HP 500GB 1.5G SATA 7.2K 3.5" HDD	395473-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	349239-B21
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	349238-B21
	HP 80GB 1.5G SATA 7.2K 3.5" HDD	349237-B21
	<b>NOTE:</b> Hot-plug capability and drive LEDs are not supported by the DL320 G5 embedded SATA storage controller.	

Step 4: Choose Additional Options for Factory Integration

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

**NOTE:** Some options may not be factory integratable. Contact your local sales representative for additional information.

[illegible]

### Options

**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>.

<b>Remote Management</b>	<b>ProLiant Essentials Integrated Lights-Out Advanced Pack</b>	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server License	263825-B21
	<b>Featuring:</b> sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites.	
	<b>NOTE:</b> For additional ProLiant Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: <a href="http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML</a>	
<b>Memory (DIMMs)</b>	2 GB Unbuffered PC2-5300 ECC DIMM (1 x 2 GB)	432806-B21
	1 GB Unbuffered PC2-5300 ECC DIMM (1 x 1 GB)	432804-B21
	512 MB Unbuffered PC2-5300 ECC DIMM (1 x 512 MB)	432803-B21
<b>Floppy Drive Bay Options</b>	Floppy Drive Assembly Option Kit	372702-B21
	DL320 G5 Front VGA Connector	419559-B21
	<b>NOTE:</b> The Front VGA Connector is installed in the floppy drive bay. You cannot install both a Floppy Drive and a Front VGA Connector.	
<b>Optical Drive Bay Options</b>	DVD-RW DRIVE OPT ALL	395498-B21
	DVD-ROM Drive Assembly Option Kit	374303-B21
	CD ROM Drive Option Assembly Option Kit	372703-B21
<b>Hard Drives</b>	<b>Serial Attached SCSI - SAS</b>	
	HP 300GB 3G SAS 15K 3.5" SP HDD	431944-B21
	HP 146GB 3G SAS 15K 3.5" SP HDD	375872-B21
	HP 72GB 3G SAS 15K 3.5" SP HDD	375870-B21
	HP 36GB 3G SAS 15K 3.5" SP HDD	375868-B21
	<b>NOTE:</b> Serial Attached SCSI - SAS Hard Drives are only supported with optional SAS HBA or RAID cards.	
	<b>NOTE:</b> Please see the Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: <a href="http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.HTML</a>	
	<b>Serial ATA (SATA)</b>	
	HP 750GB 1.5G SATA 7.2K 3.5" HDD	432341-B21
	HP 500GB 1.5G SATA 7.2K 3.5" HDD	395473-B21
	HP 250GB 1.5G SATA 7.2K 3.5" HDD	349239-B21
	HP 160GB 1.5G SATA 7.2K 3.5" HDD	349238-B21
	HP 80GB 1.5G SATA 7.2K 3.5" HDD	349237-B21
	<b>NOTE:</b> Serial ATA hot-plug capability and drive LEDs are not supported by the DL320 G5 embedded SATA storage controller.	
	<b>NOTE:</b> SATA drives have a 1 year warranty. Please see the Hard Drive	



Options

QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature:  
[http://h18000.www1.hp.com/products/quickspecs/11940\\_na/11940\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/11940_na/11940_na.HTML)

Storage Controllers

SAS Controllers

Smart Array E200 Controller

**NOTE:** The HP Smart Array E200 Controllers require the purchase of the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21).

HP Smart Array E200/128 BBWC Controller 411508-B21

HP Smart Array E200/64MB Controller 409180-B21

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

**NOTE:** Supports the Smart Array E200 Controller, Smart Array 641 Controller, Smart Array 642 Controller.

Smart Array P400 Controller

**NOTE:** The HP Smart Array P400 Controllers require the purchase of the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21).

HP Smart Array P400/256MB Controller 405132-B21

HP Smart Array P400/512MB BBWC Controller 411064-B21

Smart Array P400 Battery Attach Kit 417836-B21

**NOTE:** This option kit contains a 24" battery cable and adhesive material for installing a battery into the server if a Smart Array P400 is integrated outside of the factory. For all solutions, please refer to the server QuickSpecs and User's Manual for detailed installation instructions.

Battery-backed write cache upgrade 383280-B21

**NOTE:** For Smart Array P400 Controller only.

512MB Battery-backed cache upgrade 405148-B21

**NOTE:** For Smart Array P400 Controller only.

**NOTE:** Please see the following QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/12460\\_na/12460\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12460_na/12460_na.HTML)  
(Smart Array E200 Controller)

[http://h18000.www1.hp.com/products/quickspecs/12400\\_na/12400\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12400_na/12400_na.HTML)  
(Smart Array P400 Controller)

SAS HBA

HP 8 Internal Port SAS HBA with RAID 347786-B21

**NOTE:** The HP 8 Internal Port SAS HBA with RAID requires the purchase of the DL320 SAS/SATA Hot Plug Cable option kit (398307-B21).

HP SATA/SAS 1U Cable Kit 398307-B21

**NOTE:** This option is required for the HP 8 Internal Port SAS HBA with RAID, the HP Smart Array E200 Controller, and the HP Smart Array P400 Controller.

**NOTE:** Please see the following QuickSpecs for Technical Specifications and additional information:

[http://h18000.www1.hp.com/products/quickspecs/12332\\_na/12332\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12332_na/12332_na.HTML)  
(8 Internal Port SAS HBA)

SCSI Controllers

**NOTE:** The HP ProLiant DL320 G5 PCI-X Option Kit is required for all PCI -X Controllers.

Smart Array 6402/128 Controller 273915-B21

**NOTE:** For External drive support only

Smart Array 642 Controller 291967-B21

**NOTE:** For External drive support only



Options

128-MB BBWC (Battery-Backed Write Cache) Enabler	351580-B21
<b>NOTE:</b> Supports the Smart Array E200 Controller, Smart Array 641 Controller, Smart Array 642 Controller.	
64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2	374654-B21
<b>NOTE:</b> For External drive support only	
<b>SCSI HBA</b>	
HP SC11Xe Host Bus Adapter	412911-B21
<b>NOTE:</b> Please see the following QuickSpecs for Technical Specifications and additional information: <a href="http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11587_na/11587_na.HTML</a> (Smart Array 6400 Series) <a href="http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML</a> (Smart Array 642) <a href="http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11943_na/11943_na.HTML</a> (HP Single Channel Ultra320 SCSI HBA) <a href="http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.HTML</a> (SC11Xe HBA)	

Communications

<b>NOTE:</b> The DL320 G5 PCI-X Option Kit is required for all PCI-X NICs.	
HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-B21
HP NC340T PCI-X 4-port 1000T Gigabit Server Adapter	391661-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter	394795-B21
<b>NOTE:</b> The NC-series network adapters listed above can be used with the integrated NC324i network adapter for ProLiant Teaming and the ProLiant Essentials Intelligent Network Pack applications.	
HP NC510F PCIe 10 Gigabit Server Adapter	414126-B21
<b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter.	
HP NC510C PCIe 10 Gigabit Server Adapter	414129-B21
<b>NOTE:</b> A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter.	

Tape Drives

<b>NOTE:</b> For the complete listing of Tape Drive offerings for this server, please visit: <a href="http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html">http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html</a> For recommended tape drive offerings for this ProLiant server see the following:	
<b>USB Tape Drives</b>	
HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
<b>NOTE:</b> HP recommends combining this tape drive with the 1U USB Rack-Mount kit (A8007A) for a complete rack-mount solution.	
HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A
<b>NOTE:</b> HP recommends combining this tape drive with the 1U USB Rack-Mount kit (A8007A) for a complete rack-mount solution.	
<b>SAS Tape Drives</b>	
<b>NOTE:</b> Connecting hard drive cage and SAS tape to the same SAS Controller using split cable (supplied with tape drive) deactivates 1 of the hard drive bays. Actual hard drive bay deactivated depends on where split cable plugs into SAS	



Options

drive connector. Example: 3x SAS cable connector plugged into SAS drive connector (5-8) on the back of the hard drive cage would mean drive bay 8 is deactivated.

HP StorageWorks Ultrium 448 SAS Internal Tape Drive DW085A

**NOTE:** HP recommends combining this tape drive with the 1U SAS Rack-Mount kit (AE459A) for a complete rack-mount solution.

**NOTE:** Please refer to the “Tape Drives, Tape Autoloaders & Tape Libraries” table in the Storage section of this document for a list of SAS controllers with tape support.

**Ultrium Tape Drives**

HP StorageWorks Ultrium 232 Internal Tape Drive (Carbonite) DW064A

**NOTE:** HP recommends combining this tape drive with the 1U SCSI Rack-Mount kit (A7445B) for a complete rack-mount solution.

HP StorageWorks 3U SCSI Rack-mount kit with one Ultrium 460 (Carbon) 350546-B22

HP StorageWorks 1U SCSI Rack-mount kit with one Ultrium 448 SCSI Tape Drive (Carbonite) DW028B

**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](http://h18006.www1.hp.com/products/quickspecs/11739_na/11739_na.html)

[http://h18006.www1.hp.com/products/quickspecs/12128\\_na/12128\\_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 Ultrium tape drives, please visit: <http://www.hp.com/go/connect>.

**Rack-Mount Tape Drive Enclosures**

HP StorageWorks 1U SCSI Rack-Mount kit A7445B

**NOTE:** The 1U Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232, Ultrium 448 and Ultrium 920 tape drives.

HP StorageWorks 1U USB Rack-Mount Kit A8007A

**NOTE:** The 1U USB Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the DAT 24 USB, DAT 40 USB and DAT 72 USB tape drives.

HP StorageWorks 1U SAS Rack-Mount Kit AE459A

**NOTE:** The 1U SAS Rack-Mount Kit can support up to (2) half-height tape drives and is compatible with the Ultrium 448 SAS tape drive.

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

HP StorageWorks 3U Rack-mount kit 274338-B22

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

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

[http://h18000.www1.hp.com/products/quickspecs/10854\\_na/10854\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/10854_na/10854_na.HTML)

Options

Tape Autoloaders	<b>HP StorageWorks DAT Autoloader</b>	
	HP StorageWorks DAT 72x10 tape autoloader	AE313A
	<b>HP StorageWorks 1/8 Tape Autoloader</b>	
	HP StorageWorks 1/8 Ultrium 920 G2 Tape Autoloader	AH165A
	HP StorageWorks 1/8 Ultrium 448 G2 Tape Autoloader	AH164A
	HP StorageWorks 1/8 Ultrium 232 G2 Tape Autoloader	AH163A
	HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit	AH166A
	<b>NOTE:</b> Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions	
	<b>NOTE:</b> Please reference the DAT Autoloader QuickSpecs at <a href="http://www.hp.com/go/automation">http://www.hp.com/go/automation</a> for additional information needed to create a complete solution.	

Tape Libraries	<b>HP StorageWorks MSL2024 Tape Library</b>	
	HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
	HP StorageWorks MSL2024 1 Ultrium 960 4GB FC Drive Library	AG326B
	HP StorageWorks MSL2024 1 Ultrium 920 Drive Library	AH169A
	HP StorageWorks MSL2024 2 Ultrium 920 Drive Library	AH170A
	HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
	HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A
	<b>HP StorageWorks MSL4048 Tape Library</b>	
	HP StorageWorks MSL4048 1 Ultrium 448 Drive Library	AG320A
	HP StorageWorks MSL4048 2 Ultrium 448 Drive Library	AG321A
	HP StorageWorks MSL4048 1 Ultrium 920 Drive Library	AH171A
	HP StorageWorks MSL4048 2 Ultrium 920 Drive Library	AH172A
	HP StorageWorks MSL4048 1 Ultrium 960 Drive Library	AG322A
	HP StorageWorks MSL4048 1 Ultrium 960 4GB FC Drive Library	AG324B
	HP StorageWorks MSL4048 2 Ultrium 960 Drive Library	AG323A
	HP StorageWorks MSL4048 2 Ultrium 960 4GB FC Drive Library	AG325B
	<b>HP StorageWorks MSL6000 Tape Library</b>	
	<b>Ultrium 960 technology</b>	
	HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606B
	HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607B
	HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609B
	<b>Ultrium 460 technology</b>	
	HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598B
	HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599B
	HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601B
	<b>NOTE:</b> : Please reference the MSL2024, MSL4048, and MSL6000 Tape Library QuickSpecs at <a href="http://www.hp.com/go/automation">http://www.hp.com/go/automation</a> for additional information needed to create a complete solution; reference current compatibility information at <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a>	

Options

HP Data Protector Express Software	HP DP Express Backup Server Upgrade for ProLiant Software	BB117AP
	HP DP Express Package for Microsoft Small Business Server <b>NOTE:</b> Please see the HP Data Protector Express QuickSpecs for additional information regarding the purchase of HP Data Protector Express software: <a href="http://h18000.www1.hp.com/products/quickspecs/12337_na/12337_na.html">http://h18000.www1.hp.com/products/quickspecs/12337_na/12337_na.html</a> <b>NOTE:</b> To obtain a free licensed copy of HP Data Protector Express for ProLiant edition software, please visit the "Protect Your Data" link accessible from your ProLiant server's System Management Homepage (SMH) software (SmartStart 7.5 or later).	BB118AA
HP StorageWorks Modular Smart Array 20	HP StorageWorks Modular Smart Array 20 <b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.	335921-B21
	HP StorageWorks Modular Smart Array 20 Starter Kit <b>NOTE:</b> Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies. Includes Smart Array 6402/128 Controller. <b>NOTE:</b> The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.	366172-B21
HP StorageWorks Modular Smart Array 30	HP StorageWorks Modular Smart Array 30 SB <b>NOTE:</b> Rack-mountable 14 drive enclosure with single bus, redundant power supplies	302969-B21
	HP StorageWorks Modular Smart Array 30 DB <b>NOTE:</b> Rack-mountable 14 drive enclosure with dual bus, redundant power supplies <b>NOTE:</b> The Modular Smart Array Enclosure 30 Family supports the Wide Ultra3, Ultra320 Hot Plug Hard Drives.	302970-B21
HP StorageWorks Modular Smart Array 500	HP StorageWorks Modular Smart Array 500 Generation 2 <b>NOTE:</b> 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: <a href="http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11956_na/11956_na.HTML</a>	335880-B21
HP StorageWorks Modular Smart Array 1000	HP StorageWorks Modular Smart Array 1000 <b>NOTE:</b> Please see the Modular Smart Array 1000 QuickSpecs for additional options and configuration information at <a href="http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML</a>	201723-B22
HP StorageWorks Modular Smart Array 1500 cs	Modular Smart Array 1500 Controller Shelf <b>NOTE:</b> Please see the StorageWorks Modular SAN Array 1500 cs QuickSpecs for additional options and configuration information at: <a href="http://www.hp.com/go/MSA1500cs">http://www.hp.com/go/MSA1500cs</a>	AA986A

Options

StorageWorks Options	<b>NOTE:</b> The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: <a href="http://h18006.www1.hp.com/storage/saninfrastructure/hba.html">http://h18006.www1.hp.com/storage/saninfrastructure/hba.html</a>	
	HP StorageWorks FC2142SR 4Gb PCI-e HBA	A8002A
	HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA	A8003A
	HP StorageWorks FC1142SR 4Gb PCI-e HBA	AE311A
	HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA	AE312A
	HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA	AD167A
	HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA	AD168A
	HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA	AB429A
Uninterruptible Power Systems – Rack UPS	HP, R1.5kVA UPS, 1U	AF419A
	HP R3000 VA UPS, 2U, L5-30	AF422A
	HP R3000 VA UPS, 2U, L6-20	AF423A
	HP R5500 VA UPS	AF426A
USB Options	USB Optical Scroll Mouse (Carbonite)	DD441B
	USB 2.0 4-port HUB	DG954A
	HP 1GB Drive Key II- USB 2.0 Flash Drive	AG382AA
	1.44MB USB Floppy Drive (Carbonite)	DC141B
	HP 512MB DriveKey II- USB Flash Drive	ED516AA
ProLiant DL320 Deployment Options	Rack Adapter Kit	332815-B21
	<b>NOTE:</b> This kit allows HP rack servers to fit in racks that are 24" wide.	
	1U Cable Management Arm	365403-B21
	<b>NOTE:</b> Package contains two cable management arms.	
HP Rack 5000 Series (Metallic Carbonite)	<b>NOTE:</b> 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: <a href="http://www.racksolutions.com/hp">http://www.racksolutions.com/hp</a>	
	HP 5642 Rack-Unassembled	358254-B21
	<b>NOTE:</b> Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: <a href="http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML">http://h18000.www1.hp.com/products/quickspecs/12074_na/12074_na.HTML</a>	
	<b>NOTE:</b> For additional information regarding Rack Cabinets, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .	



Options

<b>HP Rack 10000 G2 Series</b> (Graphite Metallic)	10642 G2 (42U) Rack Cabinet – Pallet	AF001A
	10642 G2 (42U) Rack Cabinet – Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet – Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet – Pallet	AF011A
	10636 G2 (36U) Rack Cabinet – Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet – Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet	AF014A

**NOTE:** Please see the Rack 10000 G2 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: [http://h18000.www1.hp.com/products/quickspecs/12402\\_na/12402\\_na.HTML](http://h18000.www1.hp.com/products/quickspecs/12402_na/12402_na.HTML)

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

<b>HP Rack 10000 Series</b> (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

**NOTE:** xxxxxx-B21 (pallet) used to ship empty racks shipped on a truck. xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). xxxxxx-B23 (crated) used for air shipments of empty racks.

**NOTE:** It is mandatory to use a shock pallet in order to ship racks with equipment installed.

**NOTE:** Please see the Rack 10000 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and color: [http://h18000.www1.hp.com/products/quickspecs/10995\\_na/10995\\_na.HTML](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://www.hp.com/go/rackandpower>.



Options

Monitors and Keyboards	TFT7210R Rack Mounted 17" Monitor	348373-B21
	<b>NOTE:</b> For a complete list of Monitors please view the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
	TFT7600 Rackmount Keyboard Monitor	AG052A
	1U Rackmount Keyboard with USB	AG072A
	<b>NOTE:</b> For additional information regarding Rack Options, please see the following URL: <a href="http://www.hp.com/go/rackandpower">http://www.hp.com/go/rackandpower</a> .	

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	<b>NOTE:</b> Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter – 1 Pack with power supply	373035-B21
	<b>NOTE:</b> Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
	HP 1x 4 USB/PS2 KVM Switch, TT	371301-D71
	HP 1x 4 USB/PS2 KVM Switch, RM	371302-B21
	HP PS2 KVM Cable with audio, 6', 2-pack	371730-B21
	HP USB KVM Cable with audio, 6', 2-pack	371729-B21
	<b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	

HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	<b>NOTE:</b> Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	
	<b>NOTE:</b> For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: <a href="http://www.hp.com/go/kvm">http://www.hp.com/go/kvm</a> .	

Options

Service and Support Offerings (HP Care Pack Services)	<b>Hardware Services On-site Service</b>	
	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
	<b>Installation &amp; Start-up Services</b>	
	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
	<b>Support Plus</b>	
	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
	<b>Support Plus 24</b>	
	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 G5

Standard Memory

512 MB installed (1 x 512 MB SDRAM DIMM) on Celeron D model.  
1 GB (1 x 1 GB SDRAM DIMMs) on all Xeon models.

Standard Memory Plus Optional Memory

Up to 8 GB memory is available with the optional installation of PC2-5300 ECC DDR2 SDRAM Memory kits.

**NOTE:** The chart below does not represent all possible configurations. For best performance, HP recommends dual-bank interleaved mode configurations. For dual-bank interleaved mode, DIMMs must be installed in both banks with equal bank capacities.

Memory		Slot				
		1A	2B	3A	4B	Mode
Standard	512 MB	512 MB	Empty	Empty	Empty	Single-bank
Standard	1 GB	1024 MB	Empty	Empty	Empty	Single-bank
Optional	1 GB	512 MB	Empty	512 MB	Empty	Dual-bank interleaved
Optional	2 GB	1 GB	Empty	1 GB	Empty	Dual-bank interleaved
Maximum	8 GB	2 GB	2 GB	2 GB	2 GB	Dual-bank interleaved

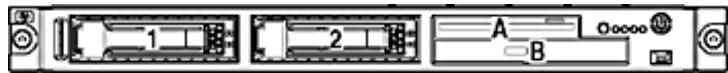
Following are memory options available from HP:

- 2 GB Unbuffered PC2-5300 ECC DIMM (1 x 2 GB)
  - 1 GB Unbuffered PC2-5300 ECC DIMM (1 x 1 GB)
  - 512 MB Unbuffered PC2-5300 ECC DIMM (1 x 512 MB)
- 432806-B21

432804-B21

432803-B21

Storage



- 1- 2
- Two SATA or SAS drive bays
- A
- Floppy Drive Bay: Optional Floppy Drive Assembly Option Kit or Optional Front VGA Connector
- B
- Optical Drive Bay: Optional CD, CDRW/DVD, or DVD-RW drive

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Floppy Drive Assembly Option Kit	Up to 1	A	Integrated
Front VGA Connector	Up to 1	A	Integrated
Low-profile IDE (ATAPI) CD-ROM Drive	Up to 1	B	Integrated IDE (ATAPI)
Low-profile IDE DVD-ROM or DVD-RW Drive	Up to 1	B	Integrated IDE

SAS Hard Drives

	Quantity Supported	Position Supported	Controller
HP 300GB 3G SAS 15K SP	Up to 2	1-2	HP 8 Internal Port SAS HBA with RAID
HP 146GB 3G SAS 15K SP			HP Smart Array E200/64MB Controller
HP 72GB 3G SAS 15K SP			HP Smart Array E200/128 BBWC Controller
HP 36GB 3G SAS 15K SP			HP Smart Array P400/256MB Controller
			HP Smart Array P400/512MB BBWC Controller

Serial ATA Hard Drives

	Quantity Supported	Position Supported	Controller
HP 750GB 1.5G SATA 7.2K	Up to 2	1-2	HP embedded 2 Port SATA Controller with RAID 0/1 support
HP 500GB 1.5G SATA 7.2K			HP 8 Internal Port SAS HBA with RAID
HP 250GB 1.5G SATA 7.2K			HP Smart Array E200/64MB Controller
HP 160GB 1.5G SATA 7.2K			HP Smart Array E200/128 BBWC Controller
HP 80GB 1.5G SATA 7.2K			HP Smart Array P400/256MB Controller
			HP Smart Array P400/512MB BBWC Controller

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 642 Controller
Modular Smart Array 500 G2	1	External	Please see the Modular Smart Array 500 QuickSpecs for the latest list of supported HBAs: <a href="http://www.hp.com/go/msa500">http://www.hp.com/go/msa500</a>
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: <a href="http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML">http://h18000.www1.hp.com/products/quickspecs/11033_na/11033_na.HTML</a>			

Maximum Storage Capacity – (SAS drives)

Internal	600GB (2 x 300GB SAS)
External	4.20TB (1 x (14 x 300GB Ultra320))
Total	4.80TB

**NOTE:** In order to implement integrated SATA RAID with Smart Start 7.4 on Windows 2000/2003, the use of a floppy drive is necessary.

Maximum Storage Capacity – (SATA Drives)

Internal	1.5TB (2 x 750GB SATA)
External	9.0TB (1 x (12 x 750GB SATA))
Total	10.5TB

**NOTE:** In order to implement integrated SATA RAID with Smart Start 7.4 on Windows 2000/2003, the use of a floppy drive is necessary.

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

Tape Drives, Tape Autoloaders & Tape Libraries

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



Storage

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

	Position Supported	Controller	Controller Part Number
<b>HP StorageWorks Tape Drives, USB External</b> DAT 24 USB DAT 40 USB DAT 72 USB	External	USB port	N/A
<b>HP StorageWorks Tape Drives, External</b> Ultrium 232 Ultrium 448 Ultrium 460 Ultrium 920 Ultrium 960 DAT 40 DAT 72 DLT VS160 SDLT 600	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks Tape Drives, SAS External</b> Ultrium 448 SAS Ultrium 920 SAS	External	HP 8 Internal Port SAS HBA with RAID 0/1 <b>NOTE:</b> Requires purchase of PCI-X Option Kit (419557-B21). <b>NOTE:</b> Please visit <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
<b>HP StorageWorks Autoloaders, External</b> DAT 72x10 Autoloader 1/8 G2 Tape Autoloader	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks SCSI Rack-Mount Tape Drive Enclosures</b> 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks USB Rack-Mount Tape Drive Enclosures</b> 1U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
<b>HP StorageWorks SAS Rack-Mount Tape Drive Enclosures</b> 1U Rack-Mount Kit	External	HP 8 Internal Port SAS HBA with RAID 0/1 <b>NOTE:</b> Requires purchase of PCI-X Option Kit (419557-B21). <b>NOTE:</b> Please visit <a href="http://www.hp.com/go/connect">http://www.hp.com/go/connect</a> for details about minimum SAS controller firmware version and SAS cabling requirements.	347786-B21
<b>HP StorageWorks Tape Libraries</b> MSL2024 (Ultrium 448, Ultrium 920 and 960-based)	External	Please consult the EBS connectivity matrix at <a href="http://www.hp.com/go/ebs">http://www.hp.com/go/ebs</a> for detailed connectivity information.	N/A



### *Storage*

MSL4048 (Ultrium 448,  
Ultrium 920 and 960-  
based)

MSL6000 (Ultrium 960  
and 460-based)

MSL6000 (SDLT 600-  
based)



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=450W) @ 230V input, Rated input power = 479W (assume output wattage=450W)
	Power Supply Output	Steady State Power	420 W (rated)
		<b>NOTE:</b> 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) <b>NOTE:</b> System performance may be reduced if operating with fan fault or above 30° 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)	
Acoustic Noise	Idle at 23 degree C ambient (Fixed Disk Drives Spinning)		
	L WAd (BELS)	6.22 bels	
	Bystander L pAm (dBA)	44.1 dBA	
	Operating (Random Seeks to Fixed Disks)		
	L WAd (BELS)	6.30 bels	

Technical Specifications

Bystander L pAm 44.9 dBA  
(dBA)

Power Supply	Input voltage specifications	Rated input voltage	100 VAC to 240 VAC
	Input Specifications	Rated input line	90 VAC to 264VAC
		Frequency range	47 to 63 Hz
		Rated input power	@ 115V input, Rated input power = 486W (assume output wattage=450W) @ 230V input, Rated input power = 479W (assume output wattage=450W)
		Rated input current	6 A, 3 A (110 V, 220 V)
		Steady state power	420W (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%
	Dielectric voltage withstand	Input to output	1800 VAC/minute
		Input to ground	1800 VAC/minute
Maximum Wet Bulb Temperature	106.3° F (41.3° C)		

Technical Specifications

Serial ATA Hard Drives	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	Capacity	160,041 MB	
		Height*	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth*	5.787 in (147.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	1.5 Gb/s	
		Seek Time (typical reads, including settling)	Single Track	0.9 ms
			Average	9.0 ms
			Full-Stroke	17.8 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	312,581,808
		Operating Temperature	41° to 131° F (5° to 55° C)	

Integrated Dual Channel Serial ATA Controller	Simultaneous drive transfer channels	2 channels
	Transfer rate synchronous (maximum theoretical)	150 MB/s per channel; 300 MB/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)
	RAID levels supported	0, 1
	RAID Features	Supports multiple logical volumes Setup through ROM based Array Configuration Utility Installation scripting support <b>NOTE:</b> This controller does not support Hot Plug functions or LED functions.
	RAID OS Support	Microsoft Windows Server 2003 <b>NOTE:</b> In order to implement integrated SATA RAID with Smart Start 7.4 on Windows 2000/2003, the use of a floppy drive is necessary. Linux (Red Hat, SuSE, UnitedLinux)

Technical Specifications

Embedded NC324i PCI Express 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	Four lane (x4), 100MHz PCI Express Reference Clock	
	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)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)

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