*Overview*
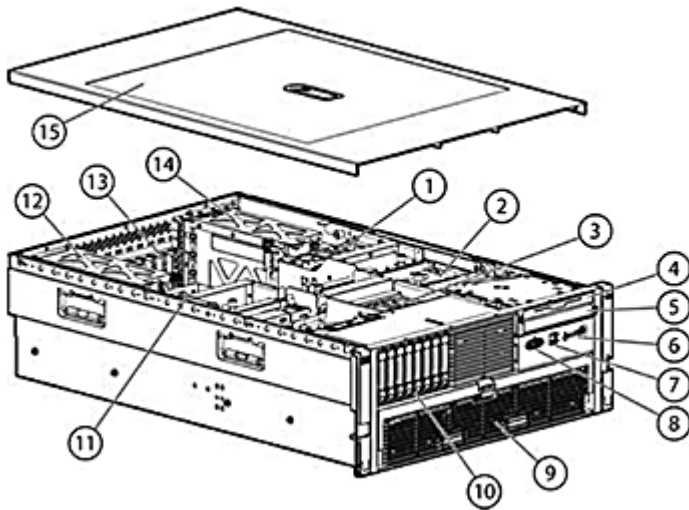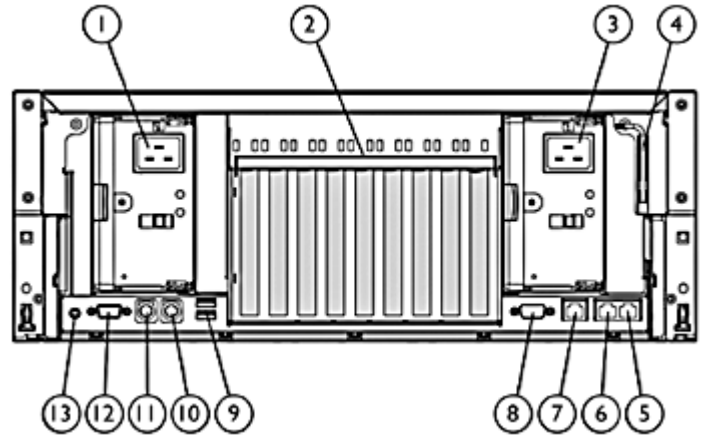


**Front View:**

1. Hot Plug Redundant Fans (standard)
2. System Insight Display
3. Hot Plug Redundant Fans (standard)
4. 1.44 MB Diskette Drive (optional)
5. DVD/CD-RW drive (standard)
6. Front Panel LED Display (internal and external health, Unit ID light) and Power Button
7. Two USB ports
8. One video port
9. Front accessible processor / memory cage
10. Eight bay Small Form Factor (SFF) Serial Attached SCSI (SAS) drive cage
11. 4U (7" Height) Rack Form Factor
12. Hot Plug Redundant Power Supply
13. Nine PCI I/O Slots (2 64-bit/100MHz PCI-X, 4 PCI-Express x4, 3 PCI-Express x8)
14. Hot Plug Redundant Power Supply
15. Removable Top Access Panel

**Rear View:**

1. Redundant hot-plug power supply (optional)
2. PCI Express and PCI-X expansion slots
3. Hot-plug power supply (primary)
4. T-15 Torx screwdriver
5. NIC connector 2
6. NIC connector 1
7. Integrated Lights-Out 2 (iLO 2) connector
8. Serial connector
9. USB connectors (two)
10. Mouse connector
11. Keyboard connector
12. Video connector
13. Rear UID button and LED

# What's New

- Upgrade options now available for Quad-Core 8300 series AMD processors

# QuickSpecs

*Overview*

## At A Glance

The HP ProLiant DL585 G2 supports the AMD 8000 processors, enabling a huge boost in performance over single-core processors. The G2 follows the award winning legacy of the HP ProLiant DL585 by offering exceptional price/performance and price per watt metrics. The 128 GB memory footprint enables most applications to run faster or support more users than other systems and with the inclusion of Rev F processors the ProLiant DL585 G2 has now been optimized for virtualization. The ProLiant DL585 G2 combines AMD OpteronTM processor technology, best-in-class management and outstanding uptime features in an enterprise-class system ideal for large data centre deployments.

- **Processors**:
  - Dual-Core AMD 8200 Series Processors
- **Memory**:
  - Up to 128 GB of memory, supported by (32) slots of PC2-5300 Registered DIMMs at 667MHz
- **Storage Controller**:
  - HP Smart Array P400/256MB Controller (optional 512MB battery backed write cache)
  - HP Smart Array P400/512MB BBWC Controller standard on some models
- **Internal Drive Support**:
  - Up to 1.168TB (8 x 146GB SFF SAS hot plug drives)
  - Slimline floppy (optional) and slimline DVD/CD-RW (standard) drives
- **Network Controller**:
  - Two embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit
- **Expansion Slots**:
  - 9 total slots: (3) x8 PCI-Express; (4) x4 PCI-Express; (2) PCI-X (100MHz)
  - One slot populated with the Smart Array P400 Controller
- **Video Ports**:
  - One front and one rear video ports
- **Integrated Hypervisors:**
  - VMware 3i virtualization technology
  - Citrix XenServer virtualization technology
- **USB Ports**:
  - (5) Total USB 2.0 Ports: (2) front; (2) rear; (1) internal
- **Redundancy**:
  - Redundant hot plug power supplies and fans
- **Management**:
  - Integrated Lights-Out 2 featuring Integrated Remote Console with KVM over IP performance over shared network access
  - Innovative diagnostic lighting (System Insight Display) for rapid response to service events
- **Form Factor**:
  - Delivering maximum performance in a versatile, rack optimized form factor
- **Deployment/Serviceability**:
  - Tool-less and virtually cable-less internal design
  - Rapid Deployment racking solution (rack rails and cable management)
- **Warranty**:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. 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. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty.
    **NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labour, 3-Year Onsite support with next business day response. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

## *Standard Features*

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h71028.www7.hp.com/ERC/downloads/4AA0-7461ENW.pdf.

| | |
|---|---|
| **Processor**<br>*Two or four of the following supported depending on Model* | AMD Opteron™ Processor 8224SE, Dual-Core (3.2 GHz, 120 Watts)<br>AMD Opteron™ Processor 8222, Dual-Core (3.0 GHz, 95 Watts)<br>AMD Opteron™ Processor 8222SE, Dual-Core (3.0 GHz, 120 Watts)<br>AMD Opteron™ Processor 8220, Dual-Core (2.8 GHz, 95 Watts)<br>AMD Opteron™ Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts)<br>AMD Opteron™ Processor 8218, Dual-Core (2.6 GHz, 95 Watts)<br>AMD Opteron™ Processor 8216, Dual-Core (2.4 GHz, 95 Watts)<br>AMD Opteron™ Processor 8214, Dual-Core (2.2 GHz, 95 Watts)<br>AMD Opteron™ Processor 8212, Dual-Core (2.0 GHz, 95 Watts) |

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**Cache Memory**     1MB Integrated Level 2 Cache memory per core

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**Upgradeability**     HP ProLiant DL585 G2 servers can support up to 4 processors.

Upgradeable to quad-core processors (when available)

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**Chipset**     nVidia NForce Professional 2200 and 2050 chipsets, and AMD-8132 chipset

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**Memory Protection & Functionality**     Advanced ECC

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| **Memory** | Type | PC2-5300 Registered DIMMs at 667 MHz |
|---|---|---|
| | Standard<br>*One of the following depending on Model* | 2 GB (4 x 512 MB)<br>4 GB (4 x 1 GB)<br>8 GB (8 x 1 GB) |
| | Maximum | 128 GB (32 x 4 GB) |

---

**Network Controller**     Two embedded NC371i Multifunction Gigabit Network Adapters with TCP/IP Offload Engine, including support for Accelerated iSCSI through an optional Licensing Kit

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# QuickSpecs

*Standard Features*

## Expansion Slots

| | Expansion Slot # | Technology | Width | Connector Width* | Bus Number** | Form Factor | Notes |
|---|---|---|---|---|---|---|---|
| | 1 | PCI-X | 64-bit | N/A | 42h | FH/HL | 100MHz |
| | 2 | PCI-X | 64-bit | N/A | 42h | FH/FL | 100MHz |
| | 3 | PCI Express | x4 | x8 | 49h | FH/FL | |
| | 4 | PCI Express | x4 | x8 | 4Ch | FH/FL | |
| | 5 | PCI Express | x8 | x16 | 46h | FH/FL | |
| | 6 | PCI Express | x4 | x8 | 4Fh | FH/FL | |
| | 7 | PCI Express | x8 | x16 | 02h | FH/FL | |
| | 8 | PCI Express | x8 | x16 | 05h | FH/FL | |
| | 9 | PCI Express | x4 | x8 | 08h | FH/HL | Reserved for storage controller |

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
FH = Full height; FL = Full length; HL = half-length; LP = Low profile.

**Manageability**  Integrated Lights-Out 2 (iLO 2) Standard Management (ASIC on the System Board)

**Storage Controllers**
One of the following depending on Model

HP Smart Array P400/256MB Controller (in a PCI-Express slot)
NOTE: Standard on 2.0GHz and 2.2GHz models.

HP Smart Array P400/512MB BBWC Controller (in a PCI-Express slot)
NOTE: Standard on 2.4GHz, 2.6GHz, 2.8GHz, and 3.0GHz models.

**Storage Data Protection**  The Battery-Backed Write Cache (BBWC) Enabler for the Smart Array P400 Controller protects up to 512-MB write cache memory from hard boot, power, controller, or system board failures.

- Standard on all HP ProLiant DL585 G2 Models
- Battery charge/life: Up to 72 hours/3 years
- Transportable data protection
- Increases overall controller performance

NOTE: Safely transport your write cache data to another HP ProLiant DL585 G2 in the data center by removing the BBWC Enabler and Smart Array P400 Controller Memory Module simultaneously (connected by short cable).

## Standard Features

| Storage | Diskette Drive | Optional 1.44 MB Diskette Drive (slimline) - ejectable for security and serviceability |
| --- | --- | --- |
| | Optical Drive | Slimline DVD/CD-RW Drive Standard on all models - ejectable for security and serviceability |
| | Hard Drives | None ship standard |
| | Hard Disk Drive Backplane | Internal SAS backplane supports up to eight SFF hard disk drives |

| Maximum Internal Storage Type | Hot Plug SAS | 1.168TB | 8 x 146GB SFF SAS drives (internal hot plug) |
| --- | --- | --- | --- |
| | Hot Plug SATA | 960GB | 8 x 120GB SFF SATA (internal hot plug) |

| Interfaces | Serial | 1 |
| --- | --- | --- |
| | Pointing Device (Mouse) | 1 |
| | Video | 1 front, 1 rear |
| | Keyboard | 1 |
| | USB 2.0 Ports | 2 front, 2 rear, 1 internal |
| | iLO 2 Remote Management | 1 |
| | Network RJ-45 | 2 |

| Graphics | Integrated ATI-RN50 with 32MB DDR memory |
| --- | --- |

| Form Factor | Rack (4U = 7 inches), ships with sliding rails and cable management system |
| --- | --- |
| | Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility |

**HP Insight Control Management Suites**

HP Insight Control Environment delivers foundation management, including remote monitoring, hardware resource deployment, health monitoring, software version control, performance monitoring, vulnerability scanning and patch management, and power management.
HP Insight Control Environment installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager
- HP iLO Advanced Pack
- HP Rapid Deployment Pack
- HP Insight Power Manager
- HP Performance Management Pack
- HP Vulnerability and Patch Management Pack

Additional ProLiant Essentials software and management tools included on the Insight Control Management kit can be installed manually

- HP Server Migration Pack - Universal Edition
- HP Open Service Event Manager
- HP Instant Support Enterprise Edition

*Standard Features*

NOTE: Server Migration Pack - Universal Edition can be installed from the SMP Universal CD included in the Insight Control Management media kit.
NOTE: For additional product and licensing information about HP Insight Control Environment, visit: http://www.hp.com/go/ice.

HP Insight Control Environment for Linux (ICE-Linux) provides comprehensive discovery, imaging & deployment, monitoring, and management for Linux-based ProLiant server platforms. Built on the industry-leading HP Systems Insight Manager framework, this solution integrates open source technology with experience leveraged from HP's Linux products in HP ICLE and HP XC Clusters, while providing paths to the future with developing management technologies.

HP Insight Control management suites and most HP ProLiant Essentials include a one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.

| | | |
|---|---|---|
| **Server Management Stand Alone Software Product - ProLiant Essentials** | HP Systems Insight Manager | HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms. |
| | ProLiant Essentials Rapid Deployment Pack | Rapid Deployment Pack (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles. For more information, visit: http://www.hp.com/go/rdp. |
| | ProLiant Essentials Server Migration Pack - Universal Edition | Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following migrations: |

> O  physical to ProLiant
> O  physical to virtual
> O  virtual to virtual
> O  virtual to ProLiant

NOTE: For more information, visit: http://www.hp.com/go/migrate.

| | | |
|---|---|---|
| | ProLiant Essentials Performance Management Pack | Performance Management Pack (offered exclusively through the Insight Control suites) - 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 |
| | Integrated Lights-Out Advanced Pack | Upgrades the iLO 2 processor with comprehensive remote control including Virtual KVM remote graphical console, enhanced console sharing and replay, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication). |

*Standard Features*

| | | |
|---|---|---|
| | ProLiant Essentials Accelerated iSCSI Pack | Enables the embedded Multifunction network controller to serve as both a NIC and an iSCSI HBA providing access to SAN storage over the same connection used for networking. Processing of the protocol stack is offloaded to the NIC reducing CPU utilization and greatly improving the speed with which the requests are processed and sent to the network. |

**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.

| | | |
|---|---|---|
| Core Infrastructure Management | 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 7.60. |
| | Insight Management Agents | The Insight Management Agents should be installed on all HP servers to present system instrumentation, health and configuration information into HP Systems Insight Manager and the HP System Management Homepage. The HP System Management Homepage aggregates systems data from Insight Management Agents and other HP management tools, providing a consolidated browser-based interface for managing individual servers.

Insight Management Agents and The HP System Management Homepage are included on ProLiant Support Packs, and can also be installed using the server profiles provided with the ProLiant Essentials Rapid Deployment Pack.

For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at: http://www.hp.com/servers/manage. |
| | Subscriber's Choice | Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides 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. |
| | ProLiant Support Packs and ROMPaq, software | The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the ProLiant Essentials Rapid Deployment Pack, SmartStart or downloaded from software and drivers download pages website at: http://www.hp.com/go/support. |

# QuickSpecs

## Standard Features

| | |
|---|---|
| HP Serviceguard for Linux (SGLX) | HP Serviceguard for Linux is a high availability clustering solution designed to protect applications and services from a wide variety of software and hardware failures, monitoring the health of each server (node) and quickly responding to failures such as those that affect system processes, system memory, LAN media and adapters, and application processes. |

The following is a quick summary of HP Serviceguard for Linux features and support. For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, see the Serviceguard for Linux Certification Matrix, available at: http://www.hp.com/go/sglx/info.

- Supported Linux Distributions:
  - Red Hat EL 4
  - Red Hat EL 5
  - SUSE SLES10
- Supported Server Platforms
  - HP Integrity
  - HP ProLiant
  - Selected 3rd party x86 class servers
- Physical and virtual server support
- Application Integration Toolkits
  - Oracle Single Instance Database
  - Serviceguard Extension for SAP for Linux (SGeSAP/LX)
  - Other Application Integration Toolkits for sendmail, MySQL and more are free to download at http://www.hp.com/go/softwaredepot/ha
- Disaster Tolerant Solutions
  - Serviceguard for Linux Extended Distance Cluster (XDC) extends cluster distances up to 100 km, utilizes software RAID mirroring for data replication and is storage array independent
  - HP StorageWorks XP/EVA Cluster Extension Software for Linux (CLX) works seamlessly with HP Serviceguard for Linux, HP StorageWorks Continuous Access, and HP Disk Arrays to automate failover and failback between sites
- Software updates are distributed by HP Services to customers with support contracts
  NOTE: For additional information on HP Serviceguard for Linux, visit: http://www.hp.com/go/sglx or see the HP Serviceguard for Linux QuickSpecs.

NOTE: HP Serviceguard for Linux products for HP ProLiant and select 3rd party x86 class servers include one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/swsupport.

| | |
|---|---|
| Industry Standard Compliance | ACPI 1.0a. Compliant |
| | PCI 2.2 Compliant |
| | PXE Support |
| | WOL Support (with embedded NC371i Multifunction Gigabit Network Adapters) |
| | Physical Address Extension (PAE) Support |
| | Microsoft® Logo certifications |
| | USB 2.0 Support |

## Standard Features

**Remote Management**     Integrated Lights-Out 2 (iLO 2) Standard Management

- Virtual Text Remote Console (pre OS-only)
- Remote Serial Console
- Virtual Power Button Control
- Virtual Unit ID control
- Integrated Remote Console (ActiveX Control client)
- Dedicated & full function shared network connectivity with VLAN
- Embedded system health
- Browser, command line and scripted access
- Automatic IP Configuration via DHCP/DNS/WINS
- Industry Standard 128-bit Secure Sockets Layer (SSL) and Secure Shell security (SSH)
- Advanced Encryption Standard (AES) / Triple Data Encryption Standard (3DES)
- OS independent hardware health status
- IML and iLO Event Logging
- Support for 12 user accounts with customizable access privilege

**Intelligent Manageability**     HP Systems Insight Manager
SmartStart
Redundant ROM
Remote Flash ROM
Management Agents
Integrated Management Log (IML)
Automatic Server Recovery-2 (ASR-2)
ROM-Based Setup Utility (RBSU)
Dynamic Sector Repairing (with Smart Array Controllers)
Drive Parameter Tracking (with Smart Array Controllers)
Pre-Failure Warranty (covers processors, SAS hard drives and memory)
Redundant/adaptive load balancing NIC Support

**Availability**

- Smart Array P400 Controller with standard Battery Backed Write Cache (BBWC) Enabler provides transportable data protection and increases overall controller performance. Up to 512MB Battery Backed Write Cache protection available on all HP ProLiant DL585 G2 models.
- Up to eight hot-plug SFF SAS Hard Drives
- Dual Hot-Plug Redundant Power Supplies
- Hot-Plug Redundant Fans (standard)

Fans are N+1 hot plug redundant and individually removable.

# QuickSpecs

## Standard Features

| | |
|---|---|
| Serviceability | • System Insight Display - precisely depicts all major subsystems of the server (PCI I/O, Memory, CPU, Redundant Cooling, Interlock, Thermtrip) and gives instant visual indication of fault status. Located on top front of server, beneath lid.<br>• Tool-less, virtually cable-less interior design<br>    ○ Tool-less access to interior of server<br>    ○ Two ejectable, slimline Media Bay media drives (DVD/CD-RW standard with support for optional floppy or optical drives) are removable without the use of tools<br>    ○ Front accessible processors and memory<br>    ○ PCI Card Guides locks full length PCI cards in place during transit<br>    ○ Six individually removable fans connect without cables to the system board<br>    ○ Tool-less removal of system board<br>• Quick Deploy Rails<br>• Tool-less design "snap in" rail |

| | |
|---|---|
| Security | Power-on password<br>Keyboard password<br>Diskette drive control enable/disable<br>Diskette boot control enable/disable<br>External USB port enable/disable<br>Network Server Mode<br>Serial interface control<br>Administrator's password<br>Removable Diskette drive (optional)<br>Removable optical drive |

| | |
|---|---|
| Power Supply | 910W (low line), 1300W (high line) with 12V main output. Size is 2.8"(H) X 4.9"(W) X 7.5"(L).<br>**NOTE:** One Hot Plug Power Supply ships standard with 2.0GHz and 2.2GHz models (optional Redundant Hot Plug Power Supply Option Kit).<br>**NOTE:** Two Hot Plug Power Supplies ship standard with 2.4GHz, 2.6GHz, 2.8GHz, and 3.0GHz models. |

| | |
|---|---|
| UPS and PDU Power Cord Matrix | Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units:<br>http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html. |

| | |
|---|---|
| Server Power Cords | IEC320-C14 to IEC320-C19 Jumper Cord<br>**NOTE:** The HP ProLiant DL585 G2 servers ship standard worldwide with a 6-foot IEC 320-C14 to IEC320-C19 jumper cord. If you require a local power cord, please check the Power Specifications below for the appropriate country-specific power cord, or consult the Power Cord Matrix:<br>http://www.hp.com/go/powercordmatrix. |

| | | |
|---|---|---|
| System Fans | Standard | 6 Hot plug, redundant fans (individually removable) |
| | Maximum | 6 Hot plug, redundant fans (individually removable) |

## Standard Features

| | |
|---|---|
| Required Cabling | For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl585-g2 |

| | |
|---|---|
| OS Support | Microsoft Windows Server 2003 |

Microsoft Windows Server 2008
Red Hat Enterprise Linux
SUSE Linux Enterprise Server
Sun Solaris
VMware Virtualization Software

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 software and drivers available for your server, please select your server: www.hp.com/servers/dl585-g2.
NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix at:
http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html
NOTE: For more information on HP's Certified and Supported ProLiant Servers, please visit the VMware Server Support Matrix at:
http://h18004.www1.hp.com/products/servers/software/vmware/hpvmwarecert.html
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:

- o 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).
- o 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: www.hp.com/servers/dl585-g2.

## Standard Features

**Rack Mounting Requirements**

HP ProLiant DL585 G2 rack models provide tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000, HP/E series, H9 series and third party racks) with an adjustment range from 24" – 36" in depth. The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

HP ProLiant DL585 G2 in Telco Racks 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/)

**Factory Express Portfolio for Servers and Storage**

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

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

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

**HP Enterprise Configurator**

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

**Service and Support**

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

HP Care Pack services include coverage for the HP branded hardware options qualified for the server and purchased at the same time or afterward that are internal to the enclosure. This also includes the 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, and 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.

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 your business. Whether an SMB, or large global corporation, HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

**Recommended Service** - simplify ProLiant solution implementation, maintenance, and management.

- Support: 3-Year 4-Hour response 24x7 Same Business Day Coverage only
- Deployment Service: Installation and Start up only

**Enhanced Service** - optimize service level to increase IT performance and availability.

*Standard Features*

- Support: 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on 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, excluding 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

*Solutions*

| | |
|---|---|
| Solutions | Designed for enterprise customers with growing data centers and application and Internet service providers that require a rack optimized 4-processor server that delivers maximum performance and high availability for highly complex, business critical applications. Specifically, the HP ProLiant DL585 G2 would be excellent for running the following types of applications: |

**Typical Usage**:

- High Performance Computing (HPC)
- Electronic Design Automation (EDA)/Semiconductor
- Financial
- Large database applications
- ERP / CRM
- Petrochemical
- Life Science and Material Science
- Video Rendering

# QuickSpecs

*Models*

## Models

| DL585R02 O3.0GHz-1 MB, 8 GB, 120W (4P Dual-Core) 448183-001 | | |
|---|---|---|
| | Processor(s) | (4) AMD Opteron™ Processor 8222SE, Dual-Core (3.0 GHz, 120 Watts) |
| | Cache Memory | 1-MB Integrated Level 2 Cache |
| | Memory | 8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/512MB BBWC Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | Two 910W/1300W Power Supplies standard (second power supply for redundancy) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

| DL585R02 O2.8GHz-1 MB, 8 GB, 95W (4P Dual-Core) 439727-001 | | |
|---|---|---|
| | Processor(s) | (4) AMD Opteron™ Processor 8220, Dual-Core (2.8 GHz, 95 Watts) |
| | Cache Memory | 1-MB Integrated Level 2 Cache |
| | Memory | 8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/512MB BBWC Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | Two 910W/1300W Power Supplies standard (second power supply for redundancy) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

## Models

| DL585R02 O2.8GHz-1 MB, 8 GB, 120W (4P Dual-Core) 413930-001 | Processor(s) | (4) AMD Opteron™ Processor 8220SE, Dual-Core (2.8 GHz, 120 Watts) |
|---|---|---|
| | Cache Memory | 1-MB Integrated Level 2 Cache |
| | Memory | 8 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/512MB BBWC Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | Two 910W/1300W Power Supplies standard (second power supply for redundancy) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

| DL585R02 O2.6GHz-1 MB, 4 GB, 95W (2P Dual-Core) 413929-001 | Processor(s) | (2) AMD Opteron™ Processor 8218, Dual-Core (2.6 GHz, 95 Watts) (2 or 4 supported) |
|---|---|---|
| | Cache Memory | 1-MB Integrated Level 2 Cache |
| | Memory | 4 x 1 GB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/512MB BBWC Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | Two 910W/1300W Power Supplies standard (second power supply for redundancy) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

# QuickSpecs

## Models

| DL585R02 O2.4 GHz-1 MB, 2 GB, 95W<br>(2P Dual- core)<br>413928-001 | Processor(s) | (2) AMD Opteron™ Processor 8216, Dual-Core (2.4 GHz, 95 Watts) (2 or 4 supported) |
| --- | --- | --- |
| | Cache Memory | 1-MB Integrated Level 2 Cache |
| | Memory | 4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/512MB BBWC Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168GB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | Two 910W/1300W Power Supplies standard (second power supply for redundancy) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

| DL585R02 O2.2 GHz-1 MB, 2 GB, 95W<br>(2P Dual-Core)<br>418550-001<br><br>DL585R02 O2.0 GHz-1 MB, 2 GB, 95W<br>(2P Dual-Core)<br>413927-001 | Processor(s)<br>One of the following depending on Model | (2) AMD Opteron™ Processor 8214, Dual-Core (2.2 GHz, 95 Watts) (2 or 4 supported)<br>(2) AMD Opteron™ Processor 8212, Dual-Core (2.0 GHz, 95 Watts) (2 or 4 supported) |
| --- | --- | --- |
| | Cache Memory | 1 MB Integrated Level 2 Cache |
| | Memory | 4 x 512 MB of PC2-5300 DDR SDRAM (Standard) to 128 GB, running at 667 MHz |
| | Network Controller | Two embedded NC371i Multifunction Gigabit Network Adapters |
| | Storage Controller | HP Smart Array P400/256MB Controller |
| | Manageability | Integrated Lights-Out 2 (iLO 2) Standard management (integrated on system board) |
| | Hard Drives | None ship standard |
| | Internal Storage | 1.168TB max (with optional 146GB SFF SAS Hot Plug hard drives) |
| | Power Supply | One 910W/1300W Power Supply standard (second power supply for redundancy is optional) |
| | Optical Drive | Slimline DVD/CD-RW Drive (8X/24X) (ejectable) |
| | Form Factor | Rack 4U |

*Configuration Information - Factory Integrated Models*

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.

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

| | | |
|---|---|---|
| Models | HP ProLiant DL585 G2 Rack CTO Chassis | 418633-B21 |

**Factory Integrated Models ship with:**

Two embedded NC371i Multifunction Gigabit Network Adapters
Integrated Lights-Out 2 (iLO 2) Standard management
Six (6) Redundant Hot Plug Fans
One Hot Plug Power Supply
Rack 4U Form Factor

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

| | | |
|---|---|---|
| Processors | AMD Opteron™ 8224SE 3.2 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit | 458932-L21 |
| | NOTE: If four processors are desired, select one 458932-L21 and one 458932-B21. | |
| | AMD Opteron™ 8222 3.0 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit | 458933-L21 |
| | NOTE: If four processors are desired, select one 458933-L21 and one 458933-B21. | |
| | AMD Opteron™ 8222SE 3.0 GHz-1 MB Dual-Core Processor (120W) 2P Option Kit | 448184-L21 |
| | NOTE: If four processors are desired, select one 448184-L21 and one 448184-B21. | |
| | AMD Opteron™ 8220 2.8 GHz-1 MB Dual-Core Processor (95W) 2P Option Kit | 439728-L21 |
| | NOTE: If four processors are desired, select one 439728-L21 and one 439728-B21. | |
| | AMD Opteron™ 8218 2.6 GHz-1 MB Dual-Core Processor 2P Option Kit | 413933-L21 |
| | NOTE: If four processors are desired, select one 413933-L21 and one 413933-B21. | |
| | AMD Opteron™ 8216 2.4 GHz-1 MB Dual-Core Processor 2P Option Kit | 413932-L21 |
| | NOTE: If four processors are desired, select one 413932-L21 and one 413932-B21. | |
| | AMD Opteron™ 8214 2.2 GHz-1 MB Dual-Core Processor 2P Option Kit | 416734-L21 |
| | NOTE: If four processors are desired, select one 416734-L21 and one 416734-B21. | |

| | | |
|---|---|---|
| Base Memory | 1 GB REG PC2-5300 2 x 512 MB Single Rank Kit | 408850-B21 |
| | 2 GB REG PC2-5300 2 x 1 GB Single Rank Kit | 408851-B21 |
| | 4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit | 408853-B21 |
| | 8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit | 408854-B21 |

NOTE: Memory must be ordered in like-pairs, i.e. two of the same size.

NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 667 MHz.

*Configuration Information - Factory Integrated Models*

| Storage Controllers | HP Smart Array P800/512 BBWC Controller | 381513-B21 |
|---|---|---|
| | HP Smart Array P600/256 BBWC Controller | 337972-B21 |
| | HP Smart Array P600/512 BBWC Controller, Factory Integrated Only | 432103-B21 |
| | HP Smart Array P400/256MB Controller | 405132-B21 |
| | HP Smart Array P400/512MB BBWC Controller | 411064-B21 |
| | HP 8 Internal Port SAS HBA with RAID | 347786-B21 |
| | HP Smart Array 6404/512 FIO CNTRLR | 452240-B21 |

| Optical Drives | NOTE: Optical drives are ejectable. | |
|---|---|---|
| | Slimline CD-RW/DVD-ROM 24X Combo Drive Option Kit | 331903-B21 |
| | Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers) | 264007-B21 |
| | HP DVD±R/RW 8X Slim | 383975-B21 |

## Step 3: Choose Additional Factory Integratable Options

| Integrated hypervisor (iHV) | VMware ESX Server 3i integrated hypervisor | |
|---|---|---|
| | integrated VMware ESX Server 3i 4P FIO | 480100-B21 |
| | integrated VMware ESX Server 3i Enterprise 4P FIO | 464670-B21 |
| | NOTE: For additional information and option kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12307_ca/12307_ca.html | |
| | Citrix XenServer integrated hypervisor | |
| | integrated XenServer HP Select Edition 2P/4P | 464673-B21 |
| | integrated XenServer HP Enterprise Edition 2P/4P | 464674-B21 |
| | NOTE: For additional information and option kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13018_ca/13018_ca.html | |

## Step 4: Choose Additional Options for Factory Integration

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

# QuickSpecs

*Options*

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

| | | |
|---|---|---|
| **HP ProLiant DL585 G2 Unique Options** | AMD Opteron™ 8224SE 3.2 GHz-1 MB Dual-Core Processor (120 Watts) 2P Option Kit | 458932-B21 |
| | AMD Opteron™ 8222 3.0 GHz-1 MB Dual-Core Processor (95 Watts) 2P Option Kit | 458933-B21 |
| | AMD Opteron™ 8222SE, Dual-Core Processor (3.0 GHz, 120 Watts) 2P Option Kit | 448184-B21 |
| | AMD Opteron™ 8220, Dual-Core Processor (2.8 GHz, 95 Watts) 2P Option Kit | 439728-B21 |
| | AMD Opteron™ 8220SE, Dual-Core Processor (2.8 GHz, 120 Watts) 2P Option Kit | 413934-B21 |
| | AMD Opteron™ 8218, Dual-Core Processor (2.6 GHz, 95 Watts) 2P Option Kit | 413933-B21 |
| | AMD Opteron™ 8216, Dual-Core Processor (2.4 GHz, 95 Watts) 2P Option Kit | 413932-B21 |
| | AMD Opteron™ 8214, Dual-Core Processor (2.2 GHz, 95 Watts) 2P Option Kit | 416734-B21 |
| | AMD Opteron™ 8212, Dual-Core Processor (2.0 GHz, 95 Watts) 2P Option Kit | 413931-B21 |

**HP Insight Control Management Suites**

NOTE: Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information.

**HP Insight Control Environment**

| | |
|---|---|
| HP Insight Control Environment, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates<br>NOTE: This part number can be purchased as a single license or as multiple licenses with a single activation key. Customer will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. Only available directly from HP and select resellers in the Americas region. | 452148-B22 |
| HP Insight Control Management Software Media Kit<br>NOTE: Insight Control Management DVD media without licenses. Contains Insight Manager and Essentials software products and components licensed by Insight Control Management suites. Uses an integrated installer to perform quick and accurate software installation and updates. | 436222-B21 |

NOTE: For additional License Kits, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_ca/12631_ca.html

**HP Insight Control Linux Edition**

| | |
|---|---|
| HP Insight Control Environment for Linux v2.0, Media pack (CD) - No licenses included<br>NOTE: This optional Media pack CD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, and an integrated installer. Servers must be acquired separately. This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: http://www.hp.com/go/ice-linux (click on Download button). | 464422-B21 |
| HP Insight Control Environment for Linux v2.0, No Media, 1-Server license, including One year of 24x7 Technical Support and Updates<br>NOTE: This part number can be used to purchase one (1) license with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP | 464423-B21 |

*Options*

Software Technical Support and Update Service. One certificate is shipped for each license.

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/13019_ca/13019_ca.html

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**Server Management Stand Alone Software Product - ProLiant Essentials**

NOTE: Electronic licensing options are available for select ProLiant Essentials software products. Please see the appropriate ProLiant Essentials QuickSpecs for additional information.

Deploy

ProLiant Essentials Rapid Deployment Pack

| | |
|---|---|
| ProLiant Essentials Rapid Deployment Pack No Media 1-Server License including 1 year of 24x7 Technical Support and Updates<br>NOTE: This license allows 1 server to be deployed and managed via RDP. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service | 452151-B21 |

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_ca/11053_ca.html

HP Server Migration Pack - Universal Edition

| | |
|---|---|
| HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates<br>NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. | 460750-B21 |
| HP Server Migration Pack - Universal Edition, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates<br>NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. | 460753-B21 |
| HP Server Migration Pack - Universal Edition, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support<br>NOTE: This license allows unlimited migrations (physical to ProLiant, physical to virtual, virtual to virtual, and virtual to ProLiant) for one year. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service | 460756-B21 |

NOTE: For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12855_ca/12855_ca.html

Control

Integrated Lights-Out Select Pack

*Options*

| | |
|---|---|
| ProLiant Essentials Integrated Lights-Out Select Pack, No Media, 1-Server License | 452158-B21 |

**NOTE:** For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12362_ca/12362_ca.html

**Integrated Lights-Out Advanced Pack**

| | |
|---|---|
| Integrated Lights-Out Advanced Pack, No Media ,1 Server License | 452141-B21 |

**NOTE:** For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/10861_ca/10861_ca.html

**Optimize**

**Accelerated iSCSI Pack**

| | |
|---|---|
| ProLiant Essentials Accelerated iSCSI Pack, No Media, Single License | 452679-B21 |

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

**NOTE:** For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12466_ca/12466_ca.html

**ProLiant Essentials Virtual Machine Management Pack**

| | |
|---|---|
| ProLiant Essentials Virtual Machine Management Pack, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates | 452153-B21 |

**NOTE:** Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

**NOTE:** For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12328_ca/12328_ca.html

**RDMA Pack**

| | |
|---|---|
| RDMA Pack for Embedded Multifunction Gigabit Server Adapters, No Media, 1-Server License | 452681-B21 |

**NOTE:** For additional License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12573_ca/12573_ca.html

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

# QuickSpecs

## Options

| | | |
|---|---|---|
| **Processors** | AMD Opteron™ 8356, Quad-Core Processor (2.3 GHz, 75W ACP) 2P Option Kit<br>NOTE: Upgrading to 8300 series processors requires that all processors in the system be matched. The VRMs included in this kit are not used on the G2; however, existing system VRMs are compatible and additional compatible VRM kits may be ordered. See the 'VRM Kit' section of the QuickSpecs for details. | 448193-B21 |
| | AMD Opteron™ 8354, Quad-Core Processor (2.2 GHz, 75W ACP) 2P Option Kit<br>NOTE: Upgrading to 8300 series processors requires that all processors in the system be matched. The VRMs included in this kit are not used on the G2; however, existing system VRMs are compatible and additional compatible VRM kits may be ordered. See the 'VRM Kit' section of the QuickSpecs for details. | 448192-B21 |
| | AMD Opteron™ 8224SE 3.2 GHz-1 MB Dual-Core Processor (120 Watts) 2P Option Kit | 458932-B21 |
| | AMD Opteron™ 8222 3.0 GHz-1 MB Dual-Core Processor (95 Watts) 2P Option Kit | 458933-B21 |
| | AMD Opteron™ 8222SE, Dual-Core Processor (3.0 GHz, 120 Watts) 2P Option Kit | 448184-B21 |
| | AMD Opteron™ 8220, Dual-Core Processor (2.8 GHz, 95 Watts) 2P Option Kit | 439728-B21 |
| | AMD Opteron™ 8220SE, Dual-Core Processor (2.8 GHz, 120 Watts) 2P Option Kit | 413934-B21 |
| | AMD Opteron™ 8218, Dual-Core Processor (2.6 GHz, 95 Watts) 2P Option Kit | 413933-B21 |
| | AMD Opteron™ 8216, Dual-Core Processor (2.4 GHz, 95 Watts) 2P Option Kit | 413932-B21 |
| | AMD Opteron™ 8214, Dual-Core Processor (2.2 GHz, 95 Watts) 2P Option Kit | 416734-B21 |
| | AMD Opteron™ 8212, Dual-Core Processor (2.0 GHz, 95 Watts) 2P Option Kit | 413931-B21 |
| **Memory** (DIMMs) | 1 GB REG PC2-5300 2 x 512 MB Single Rank Kit | 408850-B21 |
| | 2 GB REG PC2-5300 2 x 1 GB Single Rank Kit | 408851-B21 |
| | 4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit | 408853-B21 |
| | 8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit | 408854-B21 |
| **Diskette Drive** | Slimline Floppy Diskette Drive Option Kit<br>NOTE: Ejectable drive. | 390164-B21 |
| **Optical Drives** | Slimline CD-RW/DVD-ROM Combo Drive Option Kit | 331903-B21 |
| | Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers) | 264007-B21 |
| | HP DVD±R/RW 8X Slim | 383975-B21 |
| | Slimline CD-ROM Drive 24X | 356963-B21 |
| **VRM Kit** | HP DL385G2/DL585G2 VRM Kit<br>NOTE: This kit is only required when purchasing 8300 series upgrade kits for systems where existing VRMs are not installed. Two VRM kits are necessary for each 2P option kit. | 453059-B21 |

## Options

| Hard Drives | **SFF SATA Hard Disk Drives – Hot Plug** | |
|---|---|---|
| | HP 120 GB 1.5G SATA 5.4K SFF HDD | 431786-B21 |
| | HP 60 GB 1.5G SATA 5.4K SFF HDD | 379306-B21 |

**NOTE:** SATA drives have a 1 year warranty. Please see the SATA Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/11940_ca/11940_ca.html

**SFF SAS Hard Disk Drives – Hot Plug**

| | |
|---|---|
| HP 146 GB 3G SAS 10K SFF SP HDD | 431958-B21 |
| HP 72 GB 3G SAS 10K SFF SP HDD | 375861-B21 |
| HP 72 GB 3G SAS 15K SFF SP HDD | 431935-B21 |
| HP 36 GB 3G SAS 10K SFF SP HDD | 375859-B21 |
| HP 36 GB 3G SAS 15K SFF SP HDD | 431933-B21 |

**NOTE:** Please see the QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: http://h18000.www1.hp.com/products/quickspecs/12244_ca/12244_ca.html

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| Storage Controllers | **SCSI Controllers for External Drive/Storage Support** | |
|---|---|---|
| | Smart Array 6402/128 Controller | 273915-B21 |
| | Smart Array 6404/256 Controller | 273914-B21 |
| | Smart Array 642 Controller | 291967-B21 |
| | 128-MB BBWC (Battery-Backed Write Cache) Enabler | 351580-B21 |

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

| | |
|---|---|
| Ultra320 Expansion Module for SA-6402 | 273911-B21 |
| 64-Bit/133-MHz Single Channel Ultra320 SCSI HBA G2 | 374654-B21 |

**SCSI HBA**

| | |
|---|---|
| HP SC11Xe Host Bus Adapter | 412911-B21 |

**NOTE:** Please see the following QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11587_ca/11587_ca.html (Smart Array 6400 Series)
http://h18000.www1.hp.com/products/quickspecs/12069_ca/12069_ca.html (Smart Array 642)
http://h18000.www1.hp.com/products/quickspecs/11943_ca/11943_ca.html (U320 SCSI G2 HBA)
http://h18000.www1.hp.com/products/quickspecs/12566_ca/12566_ca.html (SC11Xe HBA)

**SAS Controller**

**Smart Array E500 Controller**

| | |
|---|---|
| HP Smart Array E500/256 MB Controller | 435129-B21 |

**Smart Array P400 Controller**

| | |
|---|---|
| HP Smart Array P400/256 MB Controller | 405132-B21 |

**NOTE:** The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.

*Options*

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

NOTE: The Smart Array P400 Controller supports internal Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.

| | |
|---|---|
| 512 MB DDR BBWC Upgrade | 405148-B21 |

NOTE: For Smart Array P400 Controller only.
NOTE: If you install the 512MB DDR BBWC as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP Smart Array P400 24 Inch Battery Cable Kit).

| | |
|---|---|
| Battery-backed write cache upgrade | 383280-B21 |

NOTE: For Smart Array P400 Controller only.
NOTE: If you install the Battery-backed write cache as an upgrade to a Smart Array P400/256MB Controller, you must also order part 417836-B21 (HP Smart Array P400 24 Inch Battery Cable Kit).

### Smart Array P600 Controller

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

NOTE: The Smart Array P600 Controller supports internal and external Serial Attached SCSI and Serial ATA drives. It is supported in all HP ProLiant DL585 G2 Models.

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

NOTE: For Smart Array P600 Controller only.

### Smart Array P800 Controller

| | |
|---|---|
| HP Smart Array P800/512 BBWC Controller | 381513-B21 |

NOTE: Please see the following Controller QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12700_ca/12700_ca.html (Smart Array E500 Controller)
http://h18000.www1.hp.com/products/quickspecs/12400_ca/12400_ca.html (Smart Array P400 Controller)
http://h18000.www1.hp.com/products/quickspecs/12247_ca/12247_ca.html (Smart Array P600 Controller)
http://h18000.www1.hp.com/products/quickspecs/12616_ca/12616_ca.html (Smart Array P800 Controller)

### SAS HBA

| | |
|---|---|
| HP SC44Ge Host Bus Adapter | 416096-B21 |
| HP 8 Internal Port SAS HBA with RAID | 347786-B21 |

NOTE: Please see the following QuickSpecs for additional information:
http://h18004.www1.hp.com/products/quickspecs/12617_ca/12617_ca.html (SC44Ge HBA)
http://h18004.www1.hp.com/products/quickspecs/12332_ca/12332_ca.html (SAS HBA)

## Options

| | | |
|---|---|---|
| **Communications** | HP NC110T PCI Express Gigabit Server Adapter | 434905-B21 |
| | HP NC360T PCI Express Dual Port Gigabit Server Adapter | 412648-B21 |
| | HP NC364T PCI Express Quad Port Gigabit Server Adapter | 435508-B21 |
| | NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapter NICs allowed in this server. | |
| | 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 |
| | NOTE: Supported on a full length-full height slot only. | |
| | HP NC510C PCIe 10 Gigabit Server Adapter | 414129-B21 |
| | NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510C adapter. | |
| | HP NC510F PCIe 10 Gigabit Server Adapter | 414126-B21 |
| | NOTE: A minimum of 1 gigabyte (1 GB) of server memory is required per each NC510F adapter. | |
| | HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter | 313881-B21 |

| | | |
|---|---|---|
| **HPC Specific Options** | HP IB 4X SDR PCI-e single PORT HCA | 431038-B21 |
| | HP IB 4X DDR PCI-e Single PORT HCA | 431039-B21 |
| | HP IB 4X DDR PCI-e Dual Port HCA | 409376-B21 |
| | HP IB 4X DDR Conn-X PCI-e Dual Port HCA | 448397-B21 |
| | HP IB 4X DDR PCI-e DUAL PORT 0 mem HCA | 483513-B21 |

| | | |
|---|---|---|
| **Redundant Options** | 910W (low line), 1300W (high line) Hot Plug Redundant Power Supply US – includes Nema 5-15P to IEC320-C19 power cord | 348114-001 |
| | 910W (low line), 1300W (high line) Hot Plug Redundant Power Supply - includes C14 to C19 IEC power jumper cable | 348114-B21 |
| | NOTE: If you require a local power cord, please check the Power Specifications below for the appropriate country-specific power cord, or consult the Power Cord Matrix: http://www.hp.com/go/powercordmatrix. | |

| | | |
|---|---|---|
| **Tape Drives** | NOTE: For the complete listing of Tape Drive offerings, please see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html | |
| | For recommended tape drive offerings for this ProLiant server see the following: | |
| | **USB Tape Drives** | |
| | HP StorageWorks 1U USB Rack-Mount Kit with one DAT 160 USB drive | AG703A |
| | **SAS Tape Drives** | |
| | NOTE: For the DL585 G2, HP recommends purchasing the HP SC44Ge HBA (416096-B21) for a dedicated SAS HBA for tape. | |
| | HP StorageWorks LTO-2 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. | |

*Options*

| | |
|---|---|
| HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive | EH847A |

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

| | |
|---|---|
| HP StorageWorks LTO-4 Ultrium 1840 SAS Internal Tape Drive | EH860A |

NOTE: HP recommends combining this tape drive with the 3U SAS Rack-Mount kit (AG576A) 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.

### SCSI Tape Drives

NOTE: For the DL585 G2, HP recommends purchasing the HP SC11Xe HBA (412911-B21) for a dedicated SCSI HBA for tape.

| | |
|---|---|
| HP StorageWorks 1U SCSI Rack-mount kit with one LTO-2 Ultrium 448 (Carbonite) | DW028B |
| HP StorageWorks 1U SCSI Rack-mount kit with one LTO-3 Ultrium 920 | EH903A |
| HP StorageWorks 3U SCSI Rack-Mount with 1 LTO-4 Ultrium 1840 Tape Drive | EH926A |

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_ca/11739_ca.html
http://h18006.www1.hp.com/products/quickspecs/12128_ca/12128_ca.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 40, DAT 72, DAT 160, DLT VS160, LTO-1 Ultrium 232, LTO-2 Ultrium 448 and LTO-3 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 40 USB, DAT 72 USB and DAT 160 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 LTO-2 Ultrium 448 SAS and LTO-3 Ultrium 920 SAS tape drives.

| | |
|---|---|
| HP StorageWorks 3U Rack-mount kit | 274338-B22 |

NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple LVD SCSI tape drives including DAT 40, DAT 72, DLT VS160, SDLT 600, LTO-1 Ultrium 232, LTO-2 Ultrium 460, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960 and LTO-4 Ultrium 1840 tape drives.

| | |
|---|---|
| HP StorageWorks 3U SAS Rack-mount Kit | AG576A |

NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple SAS tape drives including DAT 160 SAS, LTO-2 Ultrium 448 SAS, LTO-3 Ultrium 920 SAS, and LTO-4 Ultrium 1840 SAS 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_ca/10854_ca.html

## Options

| | | |
|---|---|---|
| **HP D2D Backup System** | HP StorageWorks D2D110 Backup System<br>NOTE: 1TB of Disk Storage | EH880A |
| | HP StorageWorks D2D110 Backup System with Data Protector Express Software Kit<br>NOTE: 1TB of Disk Storage | EH923A |
| | HP StorageWorks D2D120 Backup System<br>NOTE: 2TB of Disk Storage | EH884A |
| | HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit<br>NOTE: 2TB of Disk Storage | EH924A |
| | NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information:<br>http://h18000.www1.hp.com/products/quickspecs/12651_ca/12651_ca.html | |

| | | |
|---|---|---|
| **Tape Autoloaders** | **HP StorageWorks DAT Autoloader** | |
| | HP StorageWorks DAT 72x10 tape autoloader | AE313B |
| | **HP StorageWorks 1/8 Tape Autoloader** | |
| | HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader | AK377A |
| | HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 Tape Autoloader | AH165A |
| | HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader | AH558A |
| | HP StorageWorks 1/8 G2 LTO-2 Ultrium 448 Tape Autoloader | AH164A |
| | HP StorageWorks 1/8 G2 LTO-1 Ultrium 232 Tape Autoloader | AH163A |
| | HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit<br>NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions | AH166A |
| | NOTE: Please reference the Tape Autoloader QuickSpecs at:<br>http://www.hp.com/go/automation for additional information needed to create a complete solution. | |

| | | |
|---|---|---|
| **Tape Libraries** | **HP StorageWorks MSL2024 Tape Library** | |
| | HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Drive Library | AJ033A |
| | HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4GB FC Library | AJ034A |
| | HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library | AK378A |
| | HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 SCSI Drive Library | AG115A |
| | HP StorageWorks MSL2024 1 LTO-3 Ultrium 960 4GB FC Library | AG326B |
| | HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library | AH559A |
| | HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Drive Library | AH169A |
| | HP StorageWorks MSL2024 1 LTO-2 Ultrium 448 SCSI Drive Library | AG116A |
| | **HP StorageWorks MSL4048 Tape Library** | |
| | HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 SCSI Drive Library | AJ035A |
| | HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4GB FC Library | AJ036A |
| | HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library | AK380A |
| | HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 SCSI Drive Library | AG322A |
| | HP StorageWorks MSL4048 1 LTO-3 Ultrium 960 4GB FC Library | AG324B |
| | HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library | AH560A |
| | HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Drive Library | AH171A |
| | HP StorageWorks MSL4048 1 LTO-2 Ultrium 448 SCSI Drive Library | AG320A |

*Options*

NOTE: Please reference the MSL2024, MSL4048, MSL8096 and MSL6000 Tape Library QuickSpecs at: http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs.

| High Availability Cluster Options | HP Serviceguard for Linux | |
|---|---|---|
| | HP Serviceguard Linux x86 Server License & Media including One Year 24x7 Software Support & Updates | 463831-B21 |
| | HP Serviceguard Linux Oracle Single Instance Database Toolkit x86 Cluster License & Media including One Year 24x7 Software Support & Updates | 463833-B21 |
| | HP Serviceguard Linux Extension for SAP (SGeSAP/LX) x86 Server License & Media including One Year 24x7 Software Support & Updates | 463834-B21 |
| | HP Serviceguard Linux Extended Distance Cluster (XDC) x86 Server License & Media including One Year 24x7 Software Support & Updates | 463835-B21 |

NOTE: For a detailed list of supported configuration/certification options for HP Serviceguard for Linux please refer to the HP Serviceguard for Linux Certification Matrix at: http://www.hp.com/go/sglx/info

NOTE: HP Serviceguard for Linux products running on x86 platforms now include one year of 24 x 7 Software Technical Support and Updates. Please see the Support Information section of the HP Serviceguard for Linux QuickSpecs for details.

NOTE: For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_ca/11518_ca.html

| StorageWorks Options | NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html | |
|---|---|---|
| | HP StorageWorks FC2142SR 4Gb PCI-e HBA | A8002A |
| | HP StorageWorks FC2242SR Dual Channel 4 Gb PCI-e HBA | A8003A |
| | HP StorageWorks FC1142SR 4Gb PCI-e HBA | AE311A |
| | HP StorageWorks FC1242SR Dual Channel 4 Gb PCI-e HBA | AE312A |
| | HP StorageWorks FC2143 4Gb PCI-X 2.0 -to-Fibre Channel HBA | AD167A |
| | HP StorageWorks FC2243 Dual Channel 4Gb PCI-X 2.0 HBA | AD168A |
| | HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA | AB429A |
| | HP StorageWorks FC1243 Dual Channel 4Gb PCI-X 2.0 HBA | AE369A |
| | HP StorageWorks 81Q PCI-e FC HBA | AK344A |
| | HP StorageWorks 8Gb Simple SAN Connection Kit | AK241A |

*Options*

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|---|---|---|
| HP StorageWorks Modular Smart Array 20 | HP StorageWorks Modular Smart Array 20<br>**NOTE:** Rack-mountable 12 (SATA) drive enclosure with U320 Host connectivity, redundant power supplies.<br>**NOTE:** The Modular Smart Array Enclosure 20 Family supports the SATA 1.5Gb/s 3.5" Hot Plug Hard Drives.<br>**NOTE:** Please see the Modular Smart Array 20 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11942_ca/11942_ca.html | 335921-B21 |
| HP StorageWorks Modular Smart Array 30 | HP StorageWorks Modular Smart Array 30 SB<br>**NOTE:** Rack-mountable 14 drive enclosure with single bus, redundant power supplies<br>HP StorageWorks Modular Smart Array 30 DB<br>**NOTE:** Rack-mountable 14 drive enclosure with dual bus, redundant power supplies<br>**NOTE:** Please see the Modular Smart Array 30 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/11738_ca/11738_ca.html | 302969-B21<br><br>302970-B21 |
| HP StorageWorks Modular Smart Array 50 | HP StorageWorks Modular Smart Array 50 Enclosure<br>**NOTE:** Please see the Modular Smart Array 50 QuickSpecs for additional information including configuration steps and additional options needed for a complete solution at: http://h18000.www1.hp.com/products/quickspecs/12245_ca/12245_ca.html | 364430-B21 |
| HP StorageWorks Modular Smart Array 500 | HP StorageWorks Modular Smart Array 500 Generation 2<br>**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_ca/11956_ca.html | 335880-B21 |
| Uninterruptible Power Systems – Rack | 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 |
| HP Monitored Power Distribution Unit (PDU) | **HP Monitored Power Distribution Unit: Full Rack Version** | |
| | HP 17.3 kVA S2324 Monitored PDU – dual input, 3U, 24A | AF503A |
| | HP 8.3 kVA S1324 Monitored PDU – single input, 3U, 24A | AF504A |
| | HP 16.6 kVA S2140 Monitored PDU – dual input, 1U, 40A | AF505A |
| | HP 8.6 S1140 Monitored PDU – single input, 1U, 40A | AF506A |
| | **HP Monitored Power Distribution Unit: Half Rack Version** | |
| | HP 17.3 kVA S348 Monitored PDU- single input, 3Ø, 48A | AF916A |
| | HP 4.9kVA S124 Monitored PDU – single input, 1U, 24A | AF914A |

## Options

| | | |
|---|---|---|
| **Modular Power Distribution Units 1U/0U** (Up to 32 outlets) **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks). | HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) **NOTE:** This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR. | 252663-D71 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) | 252663-D72 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) **NOTE:** This mPDU (252663-B21), 40A model has a hardwired input. | 252663-B21 |
| | HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) **NOTE:** This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPS R3000 XR. Need to order cable PN 340653-001. | 252663-B24 |
| | **NOTE:** Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_ca/11041_ca.html | |

| | | |
|---|---|---|
| **USB Options** | HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver) | DC172B |
| | HP USB 04 Standard Keyboard | DT528A#ABA |
| | USB 2.0 4-port HUB | DG954A |
| | HP 1GB USB 2.0 Floppy Drive Key | 442085-B21 |
| | HP 256MB USB 2.0 Floppy Drive Key | 442084-B21 |

| | | |
|---|---|---|
| **HP Rack 5000 Series** (Graphite Metallic) | HP 5642 Rack-Unassembled | 358254-B21 |
| | **NOTE:** Please see the HP Rack 5642 QuickSpecs for additional part numbers and Technical Specifications such as height, width, depth, weight, and colour: http://h18000.www1.hp.com/products/quickspecs/12074_ca/12074_ca.html **NOTE:** For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower. | |

| | | |
|---|---|---|
| **HP Rack 10000 G2 Series** (Carbon/Graphite Metallic) | 10642 G2 (42U) Rack Cabinet – Pallet | AF001A |
| | 10642 G2 (42U) Rack Cabinet – Shock Pallet | AF002A |
| | 10642 G2 (42U) Rack Cabinet – Crated | AF003A |
| | 10642 G2 (42U) Rack Cabinet, with Extension – Shock Pallet | AF004A |
| | 10636 G2 (36U) Rack Cabinet – Pallet | AF011A |
| | 10636 G2 (36U) Rack Cabinet – Shock Pallet | AF012A |
| | 10636 G2 (36U) Rack Cabinet – Crated | AF013A |
| | 10636 G2 (36U) Rack Cabinet, with Extension – Shock Pallet | AF014A |
| | 10622 G2 (22U) Rack Cabinet - Pallet | AF021A |
| | 10622 G2 (22U) Rack Cabinet - Shock Pallet | AF022A |
| | 10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet | AF041A |
| | 10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet | AF042A |
| | 10647 G2 (47U) Rack Cabinet - Pallet | AF031A |
| | **NOTE:** It is mandatory to use a shock pallet when shipping racks with equipment installed. | |

*Options*

| | NOTE: Please see the Rack 10000 G2 QuickSpecs for Technical Specifications such as height, width, depth, weight, and colour: http://h18000.www1.hp.com/products/quickspecs/12402_ca/12402_ca.html | |
| --- | --- | --- |
| | NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower. | |

| | | |
| --- | --- | --- |
| **HP Rack 10000 Series** (Graphite Metallic) | HP Rack S10614 (14U) Rack Cabinet – Shock Pallet | 292302-B22 |
| | NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels). | |
| | NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and colour: http://h18000.www1.hp.com/products/quickspecs/10995_ca/10995_ca.html | |
| | NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower. | |

| | | |
| --- | --- | --- |
| **Keyboards and Monitors** | TFT7210R Rack Mounted 17" Monitor | 348373-B21 |
| | TFT7600 Rackmount Keyboard Monitor | AG052A |
| | 1U Rackmount Keyboard with USB | AG072A |
| | NOTE: For additional information regarding Rack Options, please see the following URL: http://www.hp.com/go/rackandpower. | |

| | | |
| --- | --- | --- |
| **HP KVM Switch Options** | 2x1x16 IP Console Switch with Virtual Media | AF601A |
| | 4x1x16 IP Console Switch with Virtual Media | AF602A |
| | 2x16 Server Console Switch with Virtual Media | AF600A |
| | PS/2 Virtual Media Interface Adapter, 1 pack | AF604A |
| | NOTE: Requires PS/2 and one USB port on server. | |
| | Server Console Switch (KVM), 0 x 1 x 8 port | 336044-B21 |
| | Server Console Switch (KVM), 0 x 2 x 16 port | 336045-B21 |
| | PS/2 Interface Adapter, 1 pack | 262588-B21 |
| | PS/2 Interface Adapter, 8 pack | 262587-B21 |
| | USB Interface Adapter, 1 pack | 336047-B21 |
| | Serial Interface adapter – 1 Pack with power supply | 373035-B21 |
| | NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm. | |
| | HP 1x4 Server Switch | AF611A |
| | PS2 Server Console Cable, 6 ft, 2 pack | AF612A |
| | USB Server Console Cable, 6 ft, 2 pack | AF613A |
| | NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm. | |

*Options*

| | | |
|---|---|---|
| **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 |

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

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

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

**Hardware Services On-site Service**

| | |
|---|---|
| 4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic | U4607E |
| 4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic | U4608E |

**Hardware Services 6-Hour Call to Repair On-site Service**

| | |
|---|---|
| 6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic | U4609E |

**Installation & Start-up Services**

| | |
|---|---|
| Hardware Installation, Electronic | U4617E |
| 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 | U4618E |

**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 | U4619E |

**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 | U4620E |
| 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 | U6316E |
| Onsite HW support 24x7, 4hr response and Red Hat AS Linux SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic | U9239E |

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

*Memory*

NOTE: Memory configurations listed do not apply to "Factory Integrated Models."
HP ProLiant DL585 G2 2P Models
Standard Memory
4 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz or
2 GB PC2-5300 Double Data Rate 2 (DDR2) SDRAM (Registered SDRAM) memory running at 667 MHz with Advanced ECC

At least one pair of DIMMs must be installed in slots 1A and 2A to operate the server. Observe the following DIMM installation guidelines to add additional memory to the server:

- DIMMs must be installed in pairs.
- DIMM installed on the same memory bank must have the same part number.
- DIMMs installed in different banks can be of different sizes.
- DIMMs must be installed in decreasing capacity with the largest DIMMs installed in the banks furthest away from each processor.
- DIMM banks are active only when the corresponding processor socket is populated.

NOTE: If all four banks on a memory node are populated, the maximum memory clock speed will be 533 MHz. If two or fewer banks on a memory node are populated, the maximum memory clock speed will be 667 MHz.

The following memory options are available from HP:

| | |
|---|---|
| 1 GB REG PC2-5300 2 x 512 MB Single Rank Kit | 408850-B21 |
| 2 GB REG PC2-5300 2 x 1 GB Single Rank Kit | 408851-B21 |
| 4 GB REG PC2-5300 2 x 2 GB Dual Rank Kit | 408853-B21 |
| 8 GB REG PC2-5300 2 x 4 GB Dual Rank Kit | 408854-B21 |

| Standard Memory Configuration (2.0GHz, 2.2GHz and 2.4GHz models) Total Memory = 2 GB | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 (Slot furthest from processor) | 2 | 3 | 4 | 5 | 6 | 7 | 8 (Slot closest to processor) |
| Processor 1 Memory Bus | 512 MB | 512 MB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 2 Memory Bus | 512 MB | 512 MB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 3 Memory Bus | Empty | Empty | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 4 Memory Bus | Empty | Empty | Empty | Empty | Empty | Empty | Empty | Empty |

| Standard Memory Configuration (2.6GHz model) Total Memory = 4 GB | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 (Slot furthest from processor) | 2 | 3 | 4 | 5 | 6 | 7 | 8 (Slot closest to processor) |
| Processor 1 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 2 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 3 Memory Bus | Empty | Empty | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 4 Memory Bus | Empty | Empty | Empty | Empty | Empty | Empty | Empty | Empty |

# QuickSpecs

*Memory*

| Standard Memory Configuration (2.8GHz models) Total Memory = 8 GB | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 (Slot furthest from processor) | 2 | 3 | 4 | 5 | 6 | 7 | 8 (Slot closest to processor) |
| Processor 1 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 2 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 3 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |
| Processor 4 Memory Bus | 1 GB | 1 GB | Empty | Empty | Empty | Empty | Empty | Empty |

Examples of other optional configurations include, but are not limited to:

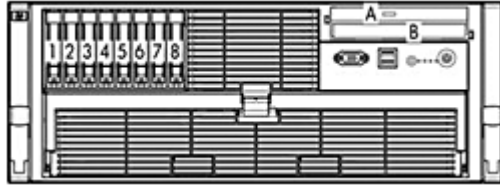| Example #1: Optional Memory Configuration with DIMM mixing Standard Memory plus Optional Memory and Processors Total Memory = 34 GB | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Processor 1 Memory Bus | 2 GB | 2 GB | 1 GB | 1 GB | 512 MB | 512 MB | 512 MB | 512 MB |
| Processor 2 Memory Bus | 2 GB | 2 GB | 1 GB | 1 GB | 512 MB | 512 MB | 512 MB | 512 MB |
| Processor 3 Memory Bus | 2 GB | 2 GB | 2 GB | 2 GB | 1 GB | 1 GB | 512 MB | 512 MB |
| Processor 4 Memory Bus | 1 GB | 1 GB | 1 GB | 1 GB | 1 GB | 1 GB | 512 MB | 512 MB |

| Example #2: Optional Memory Configuration with Partial Bus Population Standard Memory plus Optional Memory and Processors Total Memory = 8 GB | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Processor 1 Memory Bus | 512 MB | 512 MB | 512 MB | 512 MB | Empty | Empty | Empty | Empty |
| Processor 2 Memory Bus | 512 MB | 512 MB | 512 MB | 512 MB | Empty | Empty | Empty | Empty |
| Processor 3 Memory Bus | 512 MB | 512 MB | 512 MB | 512 MB | Empty | Empty | Empty | Empty |
| Processor 4 Memory Bus | 512 MB | 512 MB | 512 MB | 512 MB | Empty | Empty | Empty | Empty |

| Example #3: Maximum Memory Configuration Maximum Memory (Standard replaced with Optional Memory) Total Memory = 128 GB | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Processor 1 Memory Bus | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB |
| Processor 2 Memory Bus | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB |
| Processor 3 Memory Bus | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB |
| Processor 4 Memory Bus | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB | 4 GB |

# QuickSpecs

*Storage*



A     Ejectable: Slimline Diskette or Optical Drive (Optional)

B     Ejectable: Slimline Optical Drive (DVD/CD-RW Standard)

1-8   SFF SAS Internal Drive cage

## Drive Support

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| **Ejectable Slimline Drives** | | | |
| 1.44-MB slimline Diskette Drive | Up to 1 | A or B Based on Boot Device Selector Switch | Integrated |
| IDE slimline CD-ROM Drive | Up to 2 | A or B | Integrated IDE |
| IDE Slimline DVD-ROM Drive (8X/24X) | Up to 2 | A or B | Integrated IDE |
| IDE Slimline CD-RW/DVD-ROM Combo Drive | Up to 2 | A or B | Integrated IDE |
| IDE DVD±R/RW 8X Drive | Up to 2 | A or B | Integrated IDE |

### Hard Drives

**SFF SAS – Hot Plug Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 146GB 3G SAS 10K SP | Up to 8 | 1-8 | HP Smart Array E500/256MB Controller |
| 72GB 3G SAS 10K SP | | | HP Smart Array P400/256MB Controller |
| 72GB 3G SAS 15K SP | | | HP Smart Array P400/512MB BBWC Controller |
| 36GB 3G SAS 15K SP | | | HP Smart Array P600/256 BBWC Controller |
| | | | HP Smart Array P800/512 BBWC Controller |

*Storage*

**External Storage**

| | Quantity Supported | Position Supported | Host Controller or Adapter |
|---|---|---|---|
| Modular Smart Array 20 Family | 1 per SCSI VHDCI connector | External | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller |
| Modular Smart Array 30 Family | Up to 13 | External | Smart Array 6402/128 Controller<br>Smart Array 6404/256 Controller<br>Smart Array 642 Controller |
| Modular Smart Array 50 Enclosure | 2 per connector (supports 1+1 cascading) | External | HP Smart Array P600/256 BBWC Controller |

**Maximum Storage Capacity** – (External Enclosures Attached)

| | |
|---|---|
| Internal | 1.168TB (8 x 146 GB SFF SAS Drives) |
| External | 504TB (56 MSA60 enclosures @ 12 drives per enclosure x 750 GB SATA Drives) |

**Tape Drives, Tape Autoloaders, and 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/canada/10233.html

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

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

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

| | Position Supported | Controller | Controller Part Number |
|---|---|---|---|
| HP StorageWorks SCSI Tape Drives, External<br>LTO-1 Ultrium 232<br>LTO-2 Ultrium 448<br>LTO-2 Ultrium 460<br>LTO-3 Ultrium 960<br>LTO-3 Ultrium 920<br>LTO-4 Ultrium 1840<br>DAT 40<br>DAT 72<br>DAT 160<br>DLT VS160<br>SDLT 600<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP SC11Xe Host Bus Adapter | 412911-B21 |

*Storage*

| | | | |
|---|---|---|---|
| HP StorageWorks USB Tape Drives, External<br>DAT 40 USB<br>DAT 72 USB<br>DAT 160 USB<br>1U Rack-Mount Kit | External | USB 2.0 Port | N/A |
| HP StorageWorks SAS Tape Drives, External<br>DAT 160 SAS<br>LTO-2 Ultrium 448 SAS<br>LTO-3 Ultrium 920 SAS<br>LTO-4 Ultrium 1840 SAS<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP SC44Ge Host Bus Adapter<br>**NOTE:** Recommended. | 416096-B21 |
| | | HP Smart Array E500 Controller | 435129-B21 |
| | | **NOTE:** The following SAS Smart Array controllers require ROM Flash version 2.04 or higher for SAS tape support: | |
| | | HP Smart Array P400/256MB Controller | 405132-B21 |
| | | HP Smart Array P400/512MB Controller | 411064-B21 |
| | | **NOTE:** Please visit: http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements. | |
| HP StorageWorks SCSI Tape Automation, External<br>DAT 72x10 Autoloader<br>1/8 G2 Autoloader<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | HP SC11Xe Host Bus Adapter | 412911-B21 |
| | | HP U320e SCSI Host Bus Adapter<br>**NOTE:** Only valid for MSL tape libraries. | AH627A |
| HP StorageWorks SAS Tape Automation, External<br>1/8 G2 Autoloader<br>MSL2024<br>MSL4048<br>MSL8096 | External | HP SC44Ge Host Bus Adapter<br>**NOTE:** Please visit http://www.hp.com/go/connect for details about minimum SAS controller firmware version and SAS cabling requirements. | 416096-B21 |
| HP StorageWorks Fibre Tape Automation, External<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | Please consult the EBS connectivity matrix at http://www.hp.com/go/ebs for detailed connectivity information. | N/A |

## Storage

| | | | |
|---|---|---|---|
| **HP StorageWorks D2D Backup Systems** D2D110 D2D120 D2D130 | External | Embedded Network Controller | N/A |

# QuickSpecs

*Power Specifications*

| Part number | 348114-001 |
|---|---|
| Operational Input Voltage Range (Vrms) | 90 to 264 |
| Frequency Range (Nominal) (Hz) | 47 to 63 (50/60) |

| Nominal Input Voltage (Vrms) | 100 | 115 | 208 | 220 | 230 | 240 |
|---|---|---|---|---|---|---|
| Max Rated Output Wattage Rating | 910 | 910 | 1300 | 1300 | 1300 | 1300 |
| Nominal Input Current (A rms) | 11.9 | 10.2 | 7.7 | 7.3 | 6.9 | 6.6 |
| Max Rated Input Wattage Rating (Watts) | 1163 | 1148 | 1566 | 1566 | 1548 | 1548 |
| Max. Rated VA (Volt-Amp) | 1186 | 1172 | 1598 | 1598 | 1579 | 1579 |
| Efficiency (%) | 80 | 81 | 83 | 83 | 84 | 84 |
| Power Factor | 0.98 | | 0.98 | | | |
| Leakage Current (mA) | 0.43 | 0.50 | 0.90 | 0.96 | 1.00 | 1.04 |
| Max. Inrush Current (A peak) | 100 | 100 | 100 | 100 | 100 | 100 |
| Max. Inrush Current duration (mS) | 10 | | | | | |

NOTE: – To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at url: http://h30099.www3.hp.com/configurator/powercalcs.asp
To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL585 G2
- Click on: "Power Calculator" link. (You may need to scroll down to see it)
- There are certain Dual-core, lowline, max configurations that are not supported. All highline configurations are supported. Consult the Power Calculator to determine if your lowline configuration is supported.

| Standard Rack Model Power Cords / Jumper Cords | Description |
|---|---|
| | IEC320-C14 to IEC320-C19 Jumper Cord |

| Optional Country Power Cords and Jumper Cords | Description | Option Kit Part Number |
|---|---|---|
| | Nema 5-15P to IEC320-C19 | 235603-001 |
| | Nema 6-20P to IEC320-C19 | 235604-001 |
| | Nema L6-20P to IEC320-C19, 20A, 250V | 340653-001 |
| | IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 6 ft/2.0m) | 313227-B21 |
| | IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 8 ft/2.5m) | 291034-B21 |
| | IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 10 ft/3.0m) | 310927-B21 |
| | IEC320-C19 to IEC320-C14 Jumper (10A, IEC, 12ft/3.7m) | 313228-B21 |
| | IEC320-C19 to IEC320-C20 Jumper (16A, IEC, 8ft/2.5m) | 295633-B22 |

# QuickSpecs

*Technical Specifications*

| System Unit | Dimensions (H x W x D) (with bezel) | | 6.94 x 19 x 26.5 in (17.6 x 48.3 x 67.3 cm) |
|---|---|---|---|
| | Weight (approximate) | Maximum (all hard drives, power supplies, and processors installed) | 95 lb (43 kg) |
| | | Minimum (one hard drive, power supply, and processor installed) | 79 lb (36 kg) |
| | Input Requirements (per power supply) | Rated Line Voltage | 90 - 132 VAC, 180 - 264 VAC |
| | | Rated Input Current | 12 A (at 100 VAC), 8 A (at 200 VAC) |
| | | Rated Input Frequency | 47 to 63 Hz |
| | | Rated Input Power | 1161 W (at 100 VAC), 1598 W (at 200 VAC) |
| | BTU Rating | Maximum | 3985 BTU/hr (at 100 VAC), 5457 BTU/hr (at 200 VAC) |

**Power Specifications** To review typical system power ratings use the Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls

- Click on the system of interest. Example: DL585 G2
- Follow the instructions of the next screens

| Power Supply Output (per power supply) | Rated Steady-State Power | 910 W (at 100 VAC), 1300 W (at 200 VAC) |
|---|---|---|
| | Maximum Peak Power | 960 W (at 100 VAC), 1420 W (at 200 VAC) |
| System Inlet Temperature | Operating | 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F). |
| | Non-operating | -30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr). |
| Relative Humidity (non-condensing) | Operating | 10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. |
| | Non-operating | 5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing. |

*Technical Specifications*

| | | | |
|---|---|---|---|
| | Altitude | Operating | 3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| | | Non-operating | 9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min). |
| | Acoustic Noise | | Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). |

Idle

| | |
|---|---|
| $L$ WAd | 7.7 B |
| $L$ pAm | 58 dBA |

Operating

| | |
|---|---|
| $L$ WAd | 7.7 B |
| $L$ pAm | 58 dBA |

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| | | | |
|---|---|---|---|
| 24X Max (or higher) IDE CD-ROM Drive Slim Line | Disk | Applicable Disk | CD-DA, CD-ROM (Mode 1 and 2) |
| | | | CD-XA, CD-I (Mode 2, Form 1 and 2) |
| | | | Photo CD (Single and Multi-session) |
| | | | Mixed Mode (Audio and Data combined) |
| | | Capacity | 540 MB (Mode 1, 12 cm) |
| | | | 650 MB (Mode 2, 12 cm) |
| | | Diameter | 4.7 x 3.15 in (12 x 8 cm) |
| | | Rotational Speed | 4200 rpm maximum |
| | | Centre Hole | 0.6 in/15 mm diameter |
| | | Thickness | 1.2 mm |
| | | Track Pitch | 1.6 $\mu$m |
| | Block Size | Mode 1 | 2,048 |
| | | Mode 2 | 2,340, 2,336, 1,024 bytes |
| | | CD-DA | 2,352 bytes |
| | | CD-XA | 2,328 bytes |
| | Interface | IDE (ATAPI) | |
| | Access Times (typical) | Random | 100 ms |
| | | Full-Stroke | 2000 ms |
| | Audio Output Level | Line-Out | 0.7 Vrms at 47 kOhms |
| | | Headphone | 0.6 Vrms at 32 kOhms (maximum volume) |
| | Data Transfer Rate | Sustained | 150 KB/s (sustained 1X) |
| | | Burst | 2100 to 3600 KB/s |
| | Cache Buffer | 128 KB | |
| | Start-up Time (typical) | < 7seconds | |

*Technical Specifications*

| | | | | |
|---|---|---|---|---|
| Stop Time | < 4seconds | | | |
| Laser Parameters | Type | Semiconductor Laser GaA1As | | |
| | Wave Length | 780 ± 25 nm | | |
| | Divergence Angle | 53.5° ± 1.5° | | |
| | Output Power | 0.14 mW | | |
| Operating Conditions | Temperature | 41° to 113° F (5° to 45° C) | | |
| | Humidity | 10% to 80% | | |
| Dimensions | (HxWxD, maximum) | 1.69 x 5.75 x 8.19 in (4.29 x 15 x 20.8 cm) | | |
| | Weight | 2.66 lb (1.2 kg) | | |

| | | | | |
|---|---|---|---|---|
| Slimline CD-RW/DVD-ROM 24X Combo Drive | Shipping Dimensions | 13.88 x 11.38 x 9.25 in (35.26 x 28.91 x 23.50 cm) | | |
| | Shipping Weight | 5 lb (2.27 kg) | | |
| | Disk | Applicable Disk | DVD-ROM | |
| | | | DVD-R (Read Only) | |
| | | | 2.6 GB/side DVD-RAM (Read Only) | |
| | | | 5.2 GB/side DVD-RAM (Read Only) | |
| | | | CD-ROM Mode-1 data disc | |
| | | | CD-ROM Mode-2 data disc | |
| | | | CD Audio disc | |
| | | | CD-Extra | |
| | | | CD-RW | |
| | | | CD-R | |
| | | | CD Text | |
| | | | PhotoCD | |
| | | | CD-I (mode 2) | |
| | | | CD-I Ready | |
| | | | CD-Bridge | |
| | | Capacity | DVD-ROM | DVD-SL | 4.7 GB/side |
| | | | | DVD-DL | 8.5 GB/side |
| | | | | Double Sided | 9.40 GB/side |
| | | | DVD-R | | 3.95 GB/side |
| | | | DVD-RAM | | 2.6 GB/side and 5.2 GB/ |
| | | | CD-ROM | Mode-1 | 650 MB (550 MB) |
| | | | | Mode-2 | 742 MB (640 MB) |
| | | Block Size | DVD | | 2,048 bytes |
| | | | CD | | 2,352 (Mode-0) |
| | | | | | 2352, 2340, 2336, 2048 bytes (Mode-1) |

## Technical Specifications

|  |  |  | 2352, 2340, 2336, 2048 bytes (Mode-2) |
|---|---|---|---|
|  | Diameter |  | 120 mm, 80 mm (with adapter at vertical mounting mode) |
| Loading Mechanism | Tray type |  |  |
| Interface | EIDE (ATAPI) |  |  |
| Access Times (typical) | Random |  | DVD-ROM < 120 ms, CD-ROM < 110 ms |
|  | Full-Stroke |  | DVD-ROM < 240 ms, CD-ROM < 160 ms |
| Audio Output Level (typical) | Line-out |  | CD 0.7 Vrms at 47 Kohms Load |
| Data Transfer Rate (sustained) | DVD-ROM | Single Layer | 10.8 MB/sec. Max. |
|  | DVD-RAM | 2.77 MB/sec. Max |  |
|  | CD-ROM | 7.2 MB/sec. Max. |  |
| Cache Buffer | 2 MB |  |  |
| Spin-up Time (typical) | less than 10 seconds |  |  |
| MTBF | 120,000 Power On Hours (POH) |  |  |
| Ambient Temperature | Operating | -22° to 140° F (-30° to 60° C) |  |
| Relative Humidity | Operating | 10% to 80% |  |
|  | Storage/Transportation | 5% to 95% |  |
| Dimensions | (HxWxD, maximum) | 0.5 x 5.04 x 5.1 in (12.7 x 128 x 129.4 mm) |  |
| Option Kit Contents | DVD-ROM drive with installation guide, warranty card, registration card |  |  |

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**Integrated Lights-Out 2 Standard**
(integrated on system board)

| Architecture | 32-bit PCI-based health and remote management ASIC (Application Specific Integrated Circuit) |
|---|---|
| Processor | 32-bit RISC processor core running at 66 MHz |
| Upgradeability | Option firmware upgradeable via flash ROM |
| Video Support | Utilizes the host server's embedded video chip. Supports VGA/SVGA, 640 x 480 (256 to 16.7M colours), 800 x 600 (256 to 16.7M colours), 1024 x 768 (256 to 65K colours), 1280 x 1024 (256 colours) |
| Interfaces | One Ethernet network connection (10/100 Mb/s) |
| Memory | 2-MB Flash ROM |
|  | 8-MB SDRAM |
| Operating System Support | Windows 2000 Server |
|  | Windows 2000 Advanced Server |
|  | Red Hat 7.x |
|  | SuSE 7.0 |
| Client Browser Support | Microsoft Internet Explorer 5.5 or later. |
| iLO 2 Standard Features | Virtual Text Remote Console |
|  | Virtual KVM |
|  | Virtual Power Button Control |
|  | Virtual UID Control |

*Technical Specifications*

|  |  |  |
|---|---|---|
|  | iLO Advanced Features (optional) | Power Regulator Control |
|  |  | Dedicated LAN Connectivity |
|  |  | Secure access using web browser |
|  |  | Secure access using Secure Shell (SSH) client |
|  |  | Serial connectivity |
|  |  | Automatic IP Configuration via DHCP/DNS/WINS |
|  |  | Industry Standard 128-bit Secure Sockets Layer (SSL) Security |
|  |  | IML and iLO2 Event Logging |
|  |  | Support for up to 12 user accounts with customizable access privileges |
|  |  | Virtual Graphical Remote Console |
|  |  | Virtual Floppy/USB Key drive |
|  |  | Virtual CD-ROM drive |
|  |  | Directory Services Integration |
|  |  | Processor States Reporting |
|  |  | Terminal Services Integration |

| Smart Array P400 Controller | Disk Drive and Enclosure Interface | 3G SAS (Serial Attached SCSI) 1.5G SATA (Serial Advanced Technology Attachment) |
|---|---|---|
|  | SAS Connectors | 2 internal (SFF8484) x4 wide port connectors |
|  | Cache Memory Speed | DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth. |
|  | Server Interface | x8 2.5G PCIe provides 2GB/s maximum bandwidth. |
|  | SAS Speed | x8 3G SAS provides 2.4GB/s maximum bandwidth. |
|  | Cache Memory | 40-bit 256MB cache (72-bit 512MB module upgrades available); ECC protection, battery-backed, and transportable |
|  | Logical Drives Supported | Up to 32 logical drives |
|  | Maximum Logical Drive Capacity | 2TB |
|  | Host Memory Addressing | 64-bit, supporting greater than 4GB server memory space |
|  | RAID Support | RAID 6 with ADG (Advanced Data Guarding) requires Battery Backed Write Cache Upgrade RAID 5 (Distributed Data Guarding) RAID 1, 1+0 (Striping & Mirroring) RAID 0 (Striping) |
|  | Upgradeable Firmware | Upgradeable Firmware with recovery ROM feature |

*Technical Specifications*

| Two embedded NC371i Multifunction Gigabit Server Adapters | Network Interface Compatibility | 10/100/1000-T |  |
|---|---|---|---|
|  |  | IEEE 802.3 10Base-T |  |
|  |  | IEEE 802.3ab 1000Base-T |  |
|  |  | IEEE 802.3u 100Base-TX |  |
|  | Data Transfer Method | PCI Express, four lanes (x4) |  |
|  | 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) |
|  |  | 10/100/1000 Base-TX | Category 5 UTP up to 328 ft (100 m) |

| Environment-friendly Products and Approach | End-of-life Management and Recycling | Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. |
|---|---|---|
|  |  | The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. |