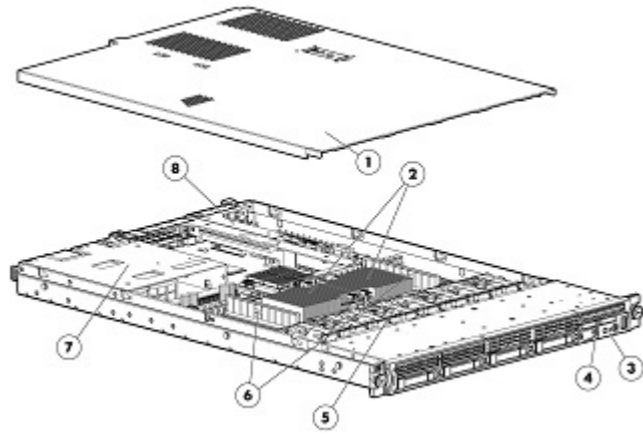*Overview*

The HP ProLiant DL360 G7 combines performance, intelligent power and cooling management with IT management tools and essential fault tolerance, all optimized for space constrained installations. A 1U server with the improved performance of the latest Intel 5600 series processors, Unique HP Thermal Logic Technologies that provide leadership in energy efficiencies and ProLiant iLO 3 remote management. HP continues to provide more performance, flexibility and efficiency for space constrained environments.

**Front View:**
1. Hood Cover
2. Up to two Intel processors

3. Video connector
4. Slide-out System Insight Display (SID)
5. Removable fan modules for easy serviceability
6. Eighteen DIMM slots: DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory

7. Redundant Hot Plug Power Supplies (upgradeable option)
8. 2 PCI-E Slots
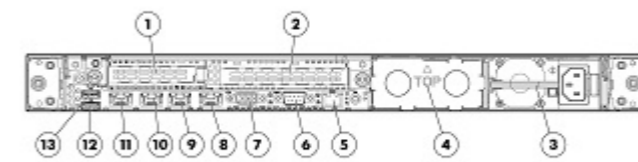
**Rear View:**
1. PCI Express expansion slot 1, low profile
2. PCI Express expansion slot 2 full-height full-length x16 (16, 8, 4, 2, 1), 75W +EXT 75W (option for PCI-X card only support)
3. Power supply bay 1 (populated)
4. Power supply bay 2
5. iLO 3 NIC connector
6. Serial connector
7. Video connector
8. NIC 4 connector
9. NIC 3 connector
10. NIC 2 connector
11. NIC 1 connector
12. USB connector
13. USB connector

## What's New
- Support for new HP hard drives, UPS

*Standard Features*

**NOTE:** For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

| | |
|---|---|
| **Processor**<br>One of the following depending on Model | **Six-Core Processors**<br>Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W, DDR3-1333, HT Turbo 1/1/1/2/2) Processor<br>**NOTE:** Not sold individually - CTO Only<br>Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W, DDR3-1333, HT Turbo 2/2/2/2/3/3) Processor<br>Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W, DDR3-1333, HT Turbo 2/2/2/2/3/3) Processor<br>Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W, DDR3-1333, HT Turbo 2/2/2/2/3/3) Processor<br>Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W DDR3-1333, HT Turbo 2/2/2/2/3/3) Processor<br>Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W, DDR3-1333, HT Turbo 2/2/3/3/4/4) Processor<br>Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT Turbo 1/1/1/1/2/2) Processor<br>Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT Turbo 1/1/1/1/2/2) Processor<br><br>**Quad-Core Processors**<br>Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W, DDR3-1333, HT Turbo 1/1/2/2) Processor<br>**NOTE:** Not sold individually - CTO Only.<br>Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W, DDR3-1333, HT Turbo 2/2/3/3) Processor<br>Intel® Xeon® X5667 (3.06GHz/4-core/12MB/95W, DDR3-1333, HT Turbo 2/2/3/3) Processor<br>Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W, DDR3-1066, HT Turbo 1/1/2/2) Processor<br>Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-800) Processor<br>Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W, DDR3-800) Processor<br>Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT Turbo 1/1/2/2) Processor<br>**NOTE:** Up to 2 processors supported. Performance Model configurations include two processors.<br>**NOTE:** HT indicates that the processor model supports Intel® /Hyper-Threading Technology<br>**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 6,5,4,3,2 and 1(6 cores) or 4,3,2 and 1(4 cores) cores active.<br>**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.<br>**NOTE:** For the Intel 5600 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage. |
| **Cache Memory**<br>One of the following depending on Model | 12MB (1 x 12MB) Level 3 cache<br>**NOTE:** All processor models except for those identified below.<br>8MB (1 x 8MB) Level 3 cache<br>**NOTE:** For processors /E5606.<br>4MB (1 x 4MB) Level 3 cache<br>**NOTE:** For processors /E5603. |
| **Chipset** | Intel® 5520 Chipset<br>**NOTE:** For more information regarding Intel® chipsets, please see the following URL:<br>http://www.intel.com/products/server/chipsets/. |
| **Upgradeability** | Upgradeable to two processors |
| **Memory Protection** | Advanced ECC (multi-bit error protection)<br>Online Spare mode (available with Intel Xeon 5600 Series processors)<br>Mirroring mode<br>Lock-step mode |
| **Memory** | Type      DDR3 Registered (RDIMM) or Unbuffered (UDIMM)<br>DIMM Slots Available      18 (3 DIMM slots per Channel/3 channels per processor)<br>Standard (Performance Models)      12GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs<br>Standard (Base Models)      6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs<br>Standard (Entry Model)      4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs<br>Standard (Efficiency Model)      4GB (2 x 2GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs<br>Maximum Capacity (RDIMM)      384GB (12 slots x 32GB @800MHz)<br>Maximum Performance Capacity (RDIMM)      192GB (6 slots x 32GB @1066MHz)<br>Maximum Capacity (UDIMM)      48GB (12 slots x 4GB @ 1333MHz)<br>**NOTE:** If only one processor is installed, only half the DIMM slots are available.<br>**NOTE:** When populating with two processors the 16GB or 32GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated.<br>**NOTE:** Depending on the memory configuration and processor model, the memory speed may run at 1333MHz, 1066MHz, or 800MHz. Please see the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.<br>**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient. |
| **Network Controller** | Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI |

**Expansion Slots**

| Expansion Slots # | Technology | Bus Width* | Connector Width | Form Factor | Notes |
|---|---|---|---|---|---|
| 1 | PCI-e | x8 | x8 | Low profile slot | |
| 2 | PCI-e | x16 | x16 | Full-length, full-height slot | |
| 2 | PCI-X**<br>(133 MHz, 3.3 Voltage) | 64-bit | | Full-length, full-height slot | |

*Indicates the number of physical electrical lanes running to the connector.
** Indicates Option kit designed for PCI-X cards only.
**NOTE:** For external power requirements for PCI options a PCI Thermal-Power Kit is offered optionally for higher power requirements.
**NOTE:** Two PCI-Express Gen 2 expansion slots: (1) full-length, full-height slot and (1) low-profile slot. Optional PCI-X Riser expansion slot for PCI-X cards only.

| | | |
|---|---|---|
| **Storage Controller**<br>One of the following depending on Model | Entry Models | HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0) |
| | Base Models | HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0) |
| | Performance Models | HP Smart Array P410i/1G FBWC Controller (RAID 0/1/1+0/5/5+0) |
| | Efficiency Models | HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0) |
| | Available Smart Array upgrades: 256MB, Battery kit upgrade (to add BBWC to the 256MB Memory option), 512MB BBWC, 512MB FBWC or 1G FBWC and Smart Array Advanced Pack (SAAP) | |

| | | |
|---|---|---|
| **Internal Storage Devices** | Diskette Drive | None |
| | Optical Drive<br>One of the following depending on Model | Optional: DVD-ROM, DVD-RW<br>**NOTE:** This option available on 4 drive bay models only.<br>Optional HP External USB CD/DVD R/RW for 8 drive models |
| | Hard Drives | None Standard |
| | Drive Bays | 4 SFF Bays standard with option for up to 8 SFF drive bays total.<br>**NOTE:** 4 bays standard in Entry, Base and CTO models, with optional upgrade to 8 bays with the SFF HD Backplane Kit (516966-B21). No CD or DVD options available when server is configured with 8 drive bays.<br>**NOTE:** This option available for 8 drive models. HP External USB CD/DVD R/RW Drive available for 8 drive systems (must be ordered separately). |

| | | | |
|---|---|---|---|
| **Maximum Internal Storage** | Hot Plug SAS | 7.2TB | 8 x 900GB SAS |
| | Hot Plug SATA | 4.0TB | 8 x 500GB SATA |
| | Hot Plug SAS SSD | 6.4TB | 8 x 800GB SAS SSD |
| | Hot Plug SATA SSD | 3.2TB | 8 x 400GB SATA SSD |

*Standard Features*

| Interfaces | | |
|---|---|---|
| | Serial | 1 |
| | Video | 1 |
| | Network RJ-45 | 4 |
| | iLO 3 remote RJ-45 management port | 1 |
| | SD slot | 1 Internal secure |
| | USB 2.0 Ports | 4 total: 2 rear, 1 front, 1 internal (secure) |

**NOTE:** Keyboard and Mouse access through USB ports. Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html.

**NOTE:** PS/2 ports have been removed for NIC expansion.

---

**Industry Standard Compliance**

ACPI 2.0b Compliant
PCI 2.2 Compliant
PXE Support
WOL Support
Microsoft® Logo certifications
USB 1.1 and 2.0 Compliant
SMBIOS 2.6.1

---

**Server Power Cords**

All Pre-configured Models servers ship with a high voltage server to PDU power cord. Localized cables may be included with geographic specific models in other world regions.
**NOTE:** ProLiant DL servers do not ship standard with NEMA power cords that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a standard wall receptacle (NEMA-15), the NEMA power cord must be ordered separately and the server will be shipped with both cords. If the order is a Factory-Integration or CTO order only the NEMA-15 power will be shipped. See Power Cords in the Additional Options section below for selection for your region.

---

**Common Slot Power Supplies**

HP's Common Slot (CS) Power Supply bay design provides the customer with commonality in power supplies across multiple platforms, saving on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with high-efficiency CS Power Supplies. HP's new CS power supplies are designed to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 94%. There are multiple CS power output options available allowing you to "right-size" the most appropriate power supply option for your server configuration. Check the Power Supplies section for power sizes supported. To make sure you select the correct power supply to meet your configuration, we suggest that you use the HP Power Advisor to "right-size" a power supply option for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and support redundant configurations. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor

**NOTE:** All HP Common Slot Power Supplies are not supported by all ProLiant Servers. Please check your server QuickSpecs to confirm support by that server.

HP's CS power supplies support multiple energy efficiency initiatives including Climate Savers Computing Initiative (CSCI) and ECOS Consulting/80PLUS ratings for Silver, Gold, and Platinum power efficiency. Additionally, server models that meet efficiency requirements for Energy Star compliance will be published once testing has been completed.

HP's -48VDC power supply is designed for those environments that require DC Voltage to operate. This power supply supplies up to 1200Watts of power on 48 Volts DC and comes with a DC power cable.

Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power supply option kits (see Redundant Options for part numbers).

---

**System Fans**

3 fan modules ship standard in 1 processor models
4 fan modules ship standard in 2 processor models
Fan redundancy standard with all modules
**NOTE:** The processor option kit contains 1 additional fan module, when upgrading from a 1 processor to two processor models. A Fan Module Option kit can also be purchased separately for use with PC Graphics card upgrades. See HP PCI Thermal Power Kit (519254-B21) in the Core Options section.

---

**Required Cabling**

For required cabling information, refer to the Web site at: www.hp.com/servers/dl360-g7

---

**Operating Systems and Virtualization Software Support for ProLiant Servers**

Microsoft Windows Server
Red Hat Enterprise Linux (RHEL)
SUSE Linux Enterprise Server (SLES)
Oracle Solaris
VMware
Citrix XenServer

**NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/DL360G7.

---

**Graphics**

Integrated ATI ES1000, 32MB video standard

- 16 bit color: maximum resolution of 1600 x 1200
- 32 bit color: maximum resolution of 1280 x 1024

**NOTE:** Maximum resolution available via iLO 3 remote console for ProLiant is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).
**NOTE:** DL360 G7 supports an HP Quadro 4000 PCIe Graphics Adapter Kit (655933-B21), selection of which requires HP PCI Thermal Power Kit (519254-B21), as well as a choice of a higher power HP Common Slot Pwr Supply Kit.
**NOTE:** Please see the HP Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.

---

**Form Factor**

1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep

---

**HP Insight management software**

HP Insight Foundation

Managing the growing number of servers can be complex and expensive for your organization. IT managers need to address changing business needs with tools that meet the challenges of managing today's complex Datacenters.
HP provides management solutions that are designed to simplify a server's installation, configuration and maintenance throughout the entire server lifecycle. This provides the customer with higher levels of operational efficiency and highly reliable systems: www.hp.com/go/foundation.

The foundation pack includes:

- HP SmartStart
- HP Management DVD
- HP ProLiant Smart Update Firmware DVD

SmartStart version supported (minimum): SmartStart 8.40.
http://www.hp.com/servers/smartstart

**NOTE:** In an effort to support reducing our environmental impact, the HP Insight Foundation Suite for ProLiant media will be available as a selectable option for this server at time of order of a CTO SKU. This will allow customers to order the number of media kits that best meet their needs and eliminate receiving unnecessary duplicate media.

HP Integrated Lights-Out 3 (iLO 3)

HP Integrated Lights-Out 3 (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control suites, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO

---

**Security**

Power-on password
Keyboard password
QuickLock, Network Server Mode
Serial interface control
Administrator's password
iLO 3 (Integrated Lights-Out 3) has 12 customizable user accounts and SSL encryption
iLO 3 can be disabled via a Global Setting
iLO Advanced supports directory services integration

---

*Standard Features*

**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. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**NOTE:** Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

*Optional Features*

| | | |
|---|---|---|
| **HP Insight management software** | HP Insight Control | HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. |
| | | Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol |
| | | HP Insight Control includes 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. |
| | HP Insight Dynamics for ProLiant | HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location. |
| | | **NOTE:** For more information, visit: http://www.hp.com/go/insightdynamics |
| **High Performance Clusters** | HP Cluster Platforms | HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters |
| | HP HPC Interconnects | High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html |
| | HP Cluster Management Utility | HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu |
| | HP HPC Linux Value Pack | HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack |
| **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 eConfigure-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 Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator | |

*Service and Support*

| | |
|---|---|
| **Service and Support** | **HP Technology Services for Industry Standard Servers and BladeSystem**<br>Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.<br><br>**What HP ProLiant and BladeSystem Services can do for you**<br>HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.<br><br>HP Technology Services meets business challenges with services offered in three packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software. |
| **Optimized Care Package** | **Supports maintaining servers at optimum performance availability**<br><br>**HP ProLiant Server Hardware Installation**<br>Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN<br><br>**HP Installation and Startup for Insight Control Software**<br>Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers<br>http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf<br><br>**3-Year HP Critical Advantage**<br>Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment<br>http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW<br><br>**Additional Services**: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express |
| **Standard Care Package** | **Package that maintains high level of server availability**<br><br>**HP ProLiant Server Hardware Installation**<br>Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN<br><br>**HP Installation and Startup for Insight Control Software**<br>Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers<br>http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf<br><br>**3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service**<br>Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf<br><br>**3-Year , HP 24x7 Software Support for Insight Control**<br>Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf<br><br>**Additional Services** - Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express |
| **Basic Care Package** | **Basic Care Package: delivers minimum recommended support service level**<br><br>**HP ProLiant Server Hardware Installation**<br>Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN<br><br>**3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service**<br>Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers<br>http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf<br><br>**Additional Services**: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express |
| **Insight Remote Support** | The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers. |
| **For more information** | To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant |

*Pre-configured Models*

## Performance Models

| | | |
|---|---|---|
| **Six-Core Model** | | |
| **HP ProLiant DL360 G7 X5675 2P 12GB-R** | Processor(s) | (2) Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W, DDR3-1333, HT Turbo 2/2/2/2/3/3) Processors |
| **P410i/1GB FBWC 8 SFF SAS/SATA 460W PS Svr** | | (2) Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W DDR3-1333, HT Turbo 2/2/2/2/3/3) Processors |
| 636365-xx1 | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| | Memory | 12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs |
| **HP ProLiant DL360 G7 X5650 2P 12GB-R** | | **NOTE:** Total of 18 DDR3 DIMM slots. |
| **P410i/1GB FBWC 8 SFF 460W 92 EFF RPS IC Svr** | Network Controller | Two HP NC382i Dual Port Multifunction Gigabit Server Adapter |
| 579239-xx1 | | (4 x 1Gb Ports) |
| | Storage Controller | HP Smart Array P410i/1GB FBWC |
| | Hard Drive | None ship standard |
| | Internal Storage | 8 SFF SAS/SATA HDD Bays |
| | Optical Drive | Not available for 8 drive models |
| | PCI-Express Slots | PCIe 2.01-full-length, full-height and 1-low profile |
| | Power Supply | Two 460W Common Slot Gold Hot Plug Power Supplies, redundant |
| | Fans | 4 total fans, redundancy standard |
| | Insight Control | HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates |
| | Form Factor | 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep |
| | Warranty | Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. |

## Base Models

| | | |
|---|---|---|
| **Six-Core Models** | | |
| **HP ProLiant DL360 G7 E5649 1P 6GB-R** | Processor(s) | (1) Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W, DDR3-1333, HT Turbo 1/1/1/1/2/2) Processor |
| **P410i/256 4 SFF 460W RPS Server** | One of the following depending on Model | (1) Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W, DDR3-1333, HT Turbo 1/1/1/1/2/2) Processor |
| 633776-xx1 | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| | Memory | 6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs |
| **HP ProLiant DL360 G7 E5645 1P 6GB-R** | | **NOTE:** Total of 18 DDR3 DIMM slots. |
| **P410i/256 4 SFF 460W RPS Server** | Network Controller | Two HP NC382i Dual Port Multifunction Gigabit Server Adapter |
| 633777-xx1 | | (4 x 1Gb Ports) |
| | Storage Controller | HP Smart Array P410i/256MB Controller |
| | Hard Drive | None ship standard |
| | Internal Storage | 4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade) |
| | Optical Drive | None ship standard |
| | PCI-Express Slots | PCIe 2.01-full-length, full-height and 1-low profile |
| | Power Supply | One 460W Common Slot Gold Hot Plug Power Supply |
| | Fans | 3 total fans redundancy standard |
| | Form Factor | 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep |
| | Warranty | Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. |

## Entry Models

| | | |
|---|---|---|
| **Quad-Core Models** | | |
| **HP ProLiant DL360 G7 E5606 1P 4GB-R P410i/ZM** | Processor(s) | (1) Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W, DDR3-800) Processor |
| | One of the following depending on Model | |
| **4 SFF 460W RPS Server** | Cache Memory | 4MB (1 x 4MB) Level 3 cache |
| 633778-xx1 | One of the following depending on Model | |
| | Memory | 4 GB (2 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs |
| | | **NOTE:** Total of 18 DDR3 DIMM slots. |
| | Network Controller | Two HP NC382i Dual Port Multifunction Gigabit Server Adapter |
| | | (4 x 1Gb Ports) |
| | Storage Controller | HP Smart Array P410i/Zero Memory Controller |
| | Hard Drive | None ship standard |
| | Internal Storage | 4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade) |
| | Optical Drive | None ship standard |
| | PCI-Express Slots | PCIe 2.01-full-length, full-height and 1-low profile |
| | Power Supply | One 460W Common Slot Gold Hot Plug Power Supply |
| | Fans | 3 total fans redundancy standard |
| | Form Factor | 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep |
| | Warranty | Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. |

## Efficiency Models

| | | |
|---|---|---|
| **Quad-Core Models** | | |
| **HP ProLiant DL360 G7 L5630 1P 4GB-U P410i/ZM** | Processor(s) | (1) Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W, DDR3-1066, HT Turbo 1/1/2/2) Processor |
| **4 SFF 460W PS Efficiency Server** | Cache Memory | 12MB (1 x 12MB) Level 3 cache |
| 579242-xx1 | Memory | 4 GB (2 x 2 GB) PC3-10600E (DDR3-1333) Unbuffered Memory |
| | | **NOTE:** Total of 18 DDR3 DIMM slots. |
| | Network Controller | Two HP NC382i Dual Port Multifunction Gigabit Server Adapter |
| | | (4 x 1Gb Ports) |
| | Storage Controller | HP Smart Array P410i/Zero Memory Controller |
| | Hard Drive | None ship standard |
| | Internal Storage | 4 SFF SAS/SATA HDD Bays (with optional 4SFF HDD upgrade) |
| | Optical Drive | None ship standard |
| | PCI-Express Slots | PCIe 2.01-full-length, full-height and 1-low profile |
| | Power Supply | One 460W Common Slot Platinum Hot Plug Power Supply |
| | Fans | 3 total fans redundancy standard |
| | Form Factor | 1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep |
| | Warranty | Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. |

| | | |
|---|---|---|
| **Country Code Key** | xx=00 | US |
| | xx=20 | Brazil |
| | xx=29 | Japan |
| | xx=37 | APD |
| | xx=42 | Europe |
| | xx=AA | PRC |

*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 configurable product offerings and requirements.
**NOTE:** Configure-to-order (CTO) servers must start with a CTO Chassis.
**NOTE:** FIO indicates that this option is only available as a factory installable option.

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

| | | |
|---|---|---|
| **HP Models** | HP ProLiant DL360 G7 Configure-to-order Server | 579237-B21 |
| | HP ProLiant DL360 G7 Performance Configure-to-order Server | 641749-B21 |

**NOTE:** This Model is sold in CTO only and with Dual X5690 or X5687 130Watt processors only.

**Factory Integrated Model ships with:**
Two HP NC382i Dual Port Multifunction Gigabit Server Adapter (4x1Gb Ports)
HP Smart Array P410i/Zero Memory Controller
HP Integrated Lights-Out 3 (iLO 3) embedded
2 PCIe 2.0 Slots - 1 full-length, full-height x16 and 1 low-profile x8.
4 bays for Hot-Plug SAS/SATA Drives(Factory Option for up to 8)
4 USB ports(1-front,1-internal, 2-rear)
1 Internal Secure Digital(SD) slot
3 fan modules; fan redundancy standard
1U Rack form factor (1.75"), less than 28 inches (70.5 cm) deep

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

| | | |
|---|---|---|
| **HP Processors** | **Six-Core Processors** | |
| | HP DL360 G7 Intel® Xeon® X5690 (3.46GHz/6-core/12MB/130W) FIO 2-processor Kit | 644131-L21 |

**NOTE:** This option/part number includes two of the listed processors

| | | |
|---|---|---|
| | HP DL360 G7 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) FIO Processor Kit | 633781-L21 |
| | HP DL360 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) FIO Processor Kit | 588062-L21 |
| | HP DL360 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) FIO Processor Kit | 588064-L21 |
| | HP DL360 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) FIO Processor Kit | 588066-L21 |
| | HP DL360 G7 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) FIO Processor Kit | 588078-L21 |
| | HP DL360 G7 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) FIO Processor Kit | 633785-L21 |
| | HP DL360 G7 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) FIO Processor Kit | 633787-L21 |
| | **Quad-Core Processors** | |
| | HP DL360 G7 Intel® Xeon® X5687 (3.60GHz/4-core/12MB/130W) FIO 2-processor Kit | 644130-L21 |

**NOTE:** This option/part number includes two of the listed processors

| | | |
|---|---|---|
| | HP DL360 G7 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) FIO Processor Kit | 633783-L21 |
| | HP DL360G7 Intel® Xeon® X5667 (3.06GHz/4-core/12MB/95W) FIO Processor Kit | 621552-L21 |
| | HP DL360 G7 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) FIO Processor Kit | 588072-L21 |
| | HP DL360 G7 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) FIO Processor Kit | 633789-L21 |
| | HP DL360 G7 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) FIO Processor Kit | 588080-L21 |
| | HP DL360 G7 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) FIO Processor Kit | 633791-L21 |

**NOTE:** Up to 2 processors supported. Performance Model configurations include two processors.
**NOTE:** HT indicates that the processor model supports Intel® /Hyper-Threading Technology
**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 4,3,2 and 1 cores active.
**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
**NOTE:** For the Intel 5600 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

| | | |
|---|---|---|
| **HP Memory** | **Registered DIMMs (RDIMMs)** | |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500656-B21 |
| | HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500658-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593339-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604504-B21 |

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

| | | |
|---|---|---|
| | HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500662-B21 |
| | HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604506-B21 |

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

| | | |
|---|---|---|
| | HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit | 500666-B21 |
| | HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit | 627812-B21 |
| | HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit | 627814-B21 |
| | **Unbuffered with ECC DIMMs (UDIMMs)** | |
| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit | 619488-B21 |

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.
**NOTE:** For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient
**NOTE:** PC3L is a low voltage memory.

**HP Power Supplies** **NOTE:** Most DL360 Series Servers operate within the 460Watt range of the base model Common Slot Power Supply. However, prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine

*Configuration Information - Factory Integrated Models*

the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.
Standard Power Supplies only come with "PreConfigured Models" shown previously and are defined in those lists of options.

| | |
|---|---|
| HP 460W Common Slot Gold Hot Plug Power Supply Kit | 503296-B21 |
| **NOTE:** Standard on most models. | |
| HP 460W Common Slot Platinum Hot Plug Power Supply Kit | 593188-B21 |
| HP 750W Common Slot Gold Hot Plug Power Supply Kit | 512327-B21 |
| HP 750W Common Slot Platinum Hot Plug Power Supply Kit | 593831-B21 |
| **NOTE:** Standard on Efficiency Model Server. | |
| HP 1200W Common Slot Silver Hot Plug Power Supply Kit | 500172-B21 |
| HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit | 437573-B21 |

**NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers.

**NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.

## Step 3: Choose Additional Factory Integratable Options

**HP Storage Controllers** **NOTE:** For additional Cache Memory Options for the standard integrated Smart Array (P410i) see HP Storage Controllers section in Step 4: below.
**NOTE:** For additional Storage Controller Options select from these options. See Additional Options in next section below for more details.

| | |
|---|---|
| HP Smart Array P212/256 BBWC 1-ports Int/1-ports Ext PCIe x8 FIO SAS Controller | 491191-B21 |
| HP Smart Array P411/256 BBWC 2-ports Ext PCIe x8 FIO SAS Controller | 491193-B21 |

**NOTE:** For more information on optional controllers.
http://h18004.www1.hp.com/products/servers/proliantstorage/arraycontrollers/index.html

**HP Performance Packs** The HP ProLiant DL360 G7 performance packs are necessary to configure a HP ProLiant DL360 G7 Performance Model. HP ProLiant DL360 G7 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The performance pack includes a 2nd processor, redundant 460w power supplies, 1G of FBWC, a second HDD backplane for full 8 SFF/SSD hard drive support and Insight Control license.

| | |
|---|---|
| HP DL360G7 X5650 HPM FIO Perf Pack | 593829-B21 |
| HP DL360G7 X5675 HPM FIO Perf Pack | 636366-B21 |
| **HP Insight Software**  HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License | 582765-B21 |
| HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License | TC203A |

## Step 4: Choose Additional Options for Factory Integration

**NOTE:** For additional options, please refer to the "Core Options" and "Additional Options" sections below.

# QuickSpecs

*Core Options*

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

| | | |
|---|---|---|
| **HP Unique Options** | HP DL360 G6/G7 Small Form Factor Hard Drive Backplane Kit | 516966-B21 |
| | **NOTE:** Integrated Optical/DVD cannot be used with this option. Optional External USB CD/DVD Drive available. | |
| | HP DL360G6 Slimline 12.7mm SATA DVD Optical Drive | 532066-B21 |
| | HP DL360G6 Slimline 12.7mm SATA DVD-RW Optical Drive | 532068-B21 |
| | **NOTE:** Integrated DVD/Optical drive option is supported on 4 Hard drive models only. | |
| | HP DL360 G6 PCI-X Riser Kit | 518824-B21 |
| | **NOTE:** For PCI-X Card support only. | |
| | **NOTE:** The PCI-X Riser option is available to convert the full-length, full-height PCI-Express slot to PCI-X slot for PCI-X cards only. | |

| | | |
|---|---|---|
| **HP Processor** | **Six-Core Processors** | |
| | HP DL360 G7 Intel® Xeon® X5675 (3.06GHz/6-core/12MB/95W) Processor Kit | 633781-B21 |
| | HP DL360 G7 Intel® Xeon® X5670 (2.93GHz/6-core/12MB/95W) Processor Kit | 588062-B21 |
| | HP DL360 G7 Intel® Xeon® X5660 (2.80GHz/6-core/12MB/95W) Processor Kit | 588064-B21 |
| | HP DL360 G7 Intel® Xeon® X5650 (2.66GHz/6-core/12MB/95W) Processor Kit | 588066-B21 |
| | HP DL360 G7 Intel® Xeon® E5649 (2.53GHz/6-core/12MB/80W) Processor Kit | 633785-B21 |
| | HP DL360 G7 Intel® Xeon® E5645 (2.40GHz/6-core/12MB/80W) Processor Kit | 633787-B21 |
| | HP DL360 G7 Intel® Xeon® L5640 (2.26GHz/6-core/12MB/60W) Processor Kit | 588078-B21 |
| | **Quad-Core Processors** | |
| | HP DL360 G7 Intel® Xeon® X5672 (3.20GHz/4-core/12MB/95W) Processor Kit | 633783-B21 |
| | HP DL360 G7 Intel® Xeon® X5667 (3.06GHz/4-core/12MB/95W) Processor Kit | 621552-B21 |
| | HP DL360 G7 Intel® Xeon® E5640 (2.66GHz/4-core/12MB/80W) Processor Kit | 588068-B21 |
| | HP DL360 G7 Intel® Xeon® E5630 (2.53GHz/4-core/12MB/80W) Processor Kit | 588070-B21 |
| | HP DL360 G7 Intel® Xeon® E5620 (2.40GHz/4-core/12MB/80W) Processor Kit | 588072-B21 |
| | HP DL360 G7 Intel® Xeon® L5630 (2.13GHz/4-core/12MB/40W) Processor Kit | 588080-B21 |
| | HP DL360 G7 Intel® Xeon® E5606 (2.13GHz/4-core/8MB/80W) Processor Kit | 633789-B21 |
| | HP DL360 G7 Intel® Xeon® E5603 (1.60GHz/4-core/4MB/80W) Processor Kit | 633791-B21 |

**NOTE:** Up to 2 processors supported. Performance Model configurations include two processors.
**NOTE:** HT indicates that the processor model supports Intel® /Hyper-Threading Technology
**NOTE:** Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 6,5,4,3,2 and 1 cores active.
**NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
**NOTE:** For the Intel 5600 Series, the letter preceding the model number indicated the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

| | | |
|---|---|---|
| **HP Memory** | **Registered DIMMs (RDIMMs)** | |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500656-B21 |
| | HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500658-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593339-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604504-B21 |
| | **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors. | |
| | HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500662-B21 |
| | HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604506-B21 |
| | **NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors. | |
| | HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit | 500666-B21 |
| | HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit | 627812-B21 |
| | HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit | 627814-B21 |
| | **Unbuffered with ECC DIMMs (UDIMMs)** | |
| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit | 619488-B21 |

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.
**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.
**NOTE:** PC3L is a low voltage memory.

| | | |
|---|---|---|
| **HP Drive Cage Options** | HP DL360 G6/G7 Small Form Factor Hard Drive Backplane Kit | 516966-B21 |
| | **NOTE:** For 4 addition HD Bays, slots 5-8. This option will work on both DL360 G6 and G7 servers. | |
| | **NOTE:** Optical/DVD cannot be used with this option. | |

| | | |
|---|---|---|
| **HP Optical Drives** | HP DL360G6 Slimline 12.7mm SATA DVD Optical Drive | 532066-B21 |
| | HP DL360G6 Slimline 12.7mm SATA DVD-RW Optical Drive | 532068-B21 |
| | **NOTE:** Integrated DVD/Optical drive option is supported on 4 Hard drive models only. | |

*Core Options*

| HP Hard Drives | | |
|---|---|---|
| | **NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. | |
| | **NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. | |
| | **SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives** | |
| | HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 619291-B21 |
| | HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 581286-B21 |
| | HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 581284-B21 |
| | HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive | 627117-B21 |
| | HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 507127-B21 |
| | HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 512547-B21 |
| | HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 512545-B21 |
| | **SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives** | |
| | HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive | 605835-B21 |
| | HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive | 507610-B21 |
| | **NOTE:** SAS Enterprise drives have a 3 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide) | |
| | **SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives** | |
| | HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive | 625609-B21 |
| | HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive | 507750-B21 |
| | **NOTE:** SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide) | |
| | **SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives** | |
| | HP 400GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 636597-B21 |
| | HP 200GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 636595-B21 |
| | HP 100GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 636593-B21 |
| | **RECOMMENDATION:** For best performance of SSD drives it is recommended that any Smart Array Controller use a max of 4 drives. For this product a second Smart Array option can be used for the second set of 4 SSD drives. | |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html (Worldwide) | |
| | **6G SAS Hot Plug Enterprise Performance Solid State Drives** | |
| | HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive | 632494-B21 |
| | HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive | 632492-B21 |
| | **6G SAS Hot Plug Enterprise Mainstream Solid State Drives** | |
| | HP 800GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 632506-B21 |
| | HP 400GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 632504-B21 |
| | HP 200GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive | 632502-B21 |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide) | |

| HP Networking | | |
|---|---|---|
| | **Gigabit Ethernet Adapters** | |
| | HP NC112T PCI Express Gigabit Server Adapter | 503746-B21 |
| | HP NC360T PCI-E Dual Port Gigabit Server Adapter | 412648-B21 |
| | HP NC365T 4-port Ethernet Server Adapter | 593722-B21 |
| | HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter | 394793-B21 |
| | HP NC373T PCI-E Multifunction Gigabit Server Adapter | 394791-B21 |
| | HP NC375T PCI Express Quad Port Gigabit Server Adapter | 538696-B21 |
| | HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter | 458492-B21 |
| | **10 Gigabit Ethernet Adapters** | |
| | **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. | |
| | **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. | |
| | HP NC550SFP Dual Port 10GbE Server Adapter | 581201-B21 |
| | HP NC523SFP 10Gb 2-port Server Adapter | 593717-B21 |
| | HP NC552SFP 10Gb 2-port Ethernet Server Adapter | 614203-B21 |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs | |
| | HP 10 GbE PCI-e G2 Dual Port Network Interface Card | 516937-B21 |

| HP InfiniBand | | |
|---|---|---|
| | QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA | 583211-B21 |
| | HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA | 592520-B21 |
| | HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA | 592521-B21 |
| | HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA | 483513-B21 |
| | HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter | 649281-B21 |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html. | |

| HP I/O Expansion Options | | |
|---|---|---|
| | HP DL360 G6 PCI-X Riser Kit | 518824-B21 |
| | **NOTE:** To convert full-length, full-height PCI-Express slot to PCI-X slot for PCI-X cards only. | |

| HP Power Supplies | | |
|---|---|---|
| | **NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor. | |
| | HP 460W Common Slot Gold Hot Plug Power Supply Kit | 503296-B21 |
| | **NOTE:** Standard on most models. | |
| | HP 460W Common Slot Platinum Hot Plug Power Supply Kit | 593188-B21 |
| | HP 750W Common Slot Gold Hot Plug Power Supply Kit | 512327-B21 |
| | HP 750W Common Slot Platinum Hot Plug Power Supply Kit | 593831-B21 |
| | **NOTE:** Standard on Efficiency Model Server. | |
| | HP 1200W Common Slot Silver Hot Plug Power Supply Kit | 500172-B21 |
| | HP 1200W Common Slot -48VDC Hot Plug Power Supply Kit | 437573-B21 |
| | **NOTE:** DC power supplies contain a -48V DC power cord designed for in rack DC power rectifiers. | |
| | **NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables. | |

| HP Cooling Options | | |
|---|---|---|
| | HP DL360G6 PCI Thermal Power Cable Kit | 519254-B21 |
| | **NOTE:** Supports 3rd Party PCI Video Graphics cards. | |

| HP Graphic Options | | |
|---|---|---|
| | NVIDIA Quadro 4000 2GB PCI-E Adapter | 655933-B21 |
| | **NOTE:** HP Quadro 4000 PCIe Graphics Adapter requires HP PCI Thermal Power Kit (519254-B21), as well as a choice of a higher power HP Common Slot Pwr Supply Kit. | |
| | **NOTE:** Please see the HP Power Advisor for estimated power consumption of your individual system configuration prior to installing GPUs. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor. | |

*Additional Options*

**NOTE:** Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

| | | |
|---|---|---|
| **HP Insight Software** | **HP Insight Control** | |
| | HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License | T9074BAE |
| | HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License | TC278AAE |
| | HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License | 452148-B22 |
| | HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Tracking License | TC275A |
| | HP Insight Software Media Kit | 436222-B21 |

**NOTE:** Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.
**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
**NOTE:** Customer will receive a license entitlement certificate. 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:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
**NOTE:** For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

**HP Insight Control for Linux**

| | | |
|---|---|---|
| | HP Insight Control for Linux including 1yr 24x7 Support Electronic License | TC213AAE |
| | HP Insight Control for Linux including 1yr 24x7 Support Single Server License | TC209A |
| | HP Insight Control for Linux Media Kit | TC208A |

**NOTE:** Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately.
**NOTE:** Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button).
**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys.
**NOTE:** For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html

**HP Integrated Lights-Out (iLO) Advanced**

| | | |
|---|---|---|
| | HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License | TA850AAE |
| | HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License | 512485-B21 |

**NOTE:** This license allows 1 server to be deployed and managed via HP iLO Advanced. 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
**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
**NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html

**HP Insight Control Server Deployment**

| | | |
|---|---|---|
| | HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License | T9082AAE |
| | HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License | 452151-B21 |

**NOTE:** Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
**NOTE:** Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
**NOTE:** Customer will receive a license entitlement certificate. 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:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
**NOTE:** For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

| | | |
|---|---|---|
| **High Performance Clusters** | **HP Cluster Management Utility** | |
| | HP Cluster Management Utility Flexible License | QL803A |

**NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.

| | | |
|---|---|---|
| | HP Cluster Management Utility Media | 433257-B21 |

**NOTE:** Order a minimum of one license per cluster to purchase media including software and documentation, which will be delivered to the customer, and also licenses CMU management. No license key is delivered or required.
**NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html

**HP HPC Linux Value Pack**

| | | |
|---|---|---|
| | HP High Performance Computing Linux Value Pack 1 Processor Flexible License | TC293B |

**NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.

| | | |
|---|---|---|
| | HP High Performance Computing Linux Value Pack Media Kit | TC294A |

**NOTE:** This part number can be used to purchase media including software and documentation, which will be delivered to the customer.
**NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html

| | | |
|---|---|---|
| **HP I/O Accelerator Options** | HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers | 600278-B21 |

**NOTE:** A low-profile PCI bracket is included for use in low-profile slots.

| | | |
|---|---|---|
| | HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers | 600279-B21 |

**NOTE:** A low-profile PCI bracket is included for use in low-profile slots.

| | | |
|---|---|---|
| | HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers | 600281-B21 |
| | HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers | 600282-B21 |
| | HP 1.28TB Multi Level Cell PCIe IO Accelerator | 641027-B21 |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html
(Worldwide)

| | | |
|---|---|---|
| **HP Security** | HP Trusted Platform Module Option | 488069-B21 |

**NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM.
**NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment.
**NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.

*Additional Options*

**HP Storage Controllers**

**NOTE:** The DL360 G7 Server comes standard with an integrated P410i Smart Array Controller designed to mange up to 8 SFF hard drives from HP. For additional capabilities and capacities HP offers additional Smart Arrays. (BBWC=Battery Backed Write Cache and FBWC=Flash Back Write Cache)

**SAS Controllers**

**Smart Array P212 Controller**

| | |
|---|---|
| HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462828-B21 |
| HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller | 462834-B21 |

**Smart Array P411 Controller**

| | |
|---|---|
| HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller | 462830-B21 |
| HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller | 462832-B21 |
| HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller | 578229-B21 |
| HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller | 572531-B21 |

**Smart Array P812 Controller**

| | |
|---|---|
| HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller | 487204-B21 |

**NOTE:** The HP Smart Array P812/1G Flash Backed Cache Controller has the ability to support 8 internal drives on the DL360 G7 as well as external storage solutions. For use with the internal 8 drives the Mini-SAS to Mini-SAS, 25.50" & 28.00" option kit (PN: 496013-B21) is required.

**Optional Upgrades**

**NOTE:** For Smart Array P410i Controller and Smart Array P212 Controller. Not available for factory integration.

| | |
|---|---|
| HP 256MB P-series Cache Upgrade | 462968-B21 |

**NOTE:** Supported on HP Smart Array P212 Controller and HP Smart Array P410i Controller.

| | |
|---|---|
| HP 512MB P-Series Battery Backed Write Cache Upgrade | 462967-B21 |
| HP 512MB Flash Backed Write Cache | 534916-B21 |

**NOTE:** Supported on the Smart Array P410i Controller only.

| | |
|---|---|
| HP 1GB Flash Backed Cache | 534562-B21 |

**NOTE:** Supported on the Smart Array P410i Controller only.

| | |
|---|---|
| HP 650 mAh P-Series Battery | 462969-B21 |

**NOTE:** To enable BBWC on the 256MB cache kits.

| | |
|---|---|
| HP Mini SAS to Mini SAS 28in Cable Assembly | 496013-B21 |
| HP Chipset SATA Cable Kit | 627121-B21 |

**NOTE:** This cable allows for connection of Chipset SATA to 1 SATA HD in the drive cage. This solution allows for disabling the embedded storage controller. Qty of 1 HD blanks may need to be ordered/installed when using this solution (503771-B21) to ensure all bays are populated with HDs or blanks. There is no support for optical media. There is no support for HD LED or thermal management when this solution is deployed. Only supported on non Hot Plug SFF Hard Drives configurations. Hot Plug is not supported. Loss of HD support for all drives bays except for the 1 deployed in this configuration. VMWare (ESX3.5/i ) is not supported in this configuration.

| | |
|---|---|
| HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License | 516471-B21 |

**NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers 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). Include one year of 24x7 HP Software Technical Support Services.

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html
(Smart Array P212 Controller)
http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html
(Smart Array P411 Controller)
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html
(Smart Array P812 Controller)
http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html
(Smart Array Advanced Pack)

**SAS HBA**

| | |
|---|---|
| HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter | 614988-B21 |

**NOTE:** This is a 2 x4 External Port HBA
**NOTE:** This is only approved for the HP Storage Works P2000 G3 SAS Modular Smart Array.

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html
(SC08e 6Gb HBA)

**SCSI HBA**

| | |
|---|---|
| HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |

**NOTE:** Recommended HBA for SCSI tape drive connect.

**NOTE:** Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html
(SC11Xe HBA)

---

**HP Power Cords**

**NOTE:** The HP ProLiant DL360 G7 ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For specific regional power cords purchase from the following.

| | |
|---|---|
| HP 1.83m 10A C13 Power Cord | AF556A |
| HP 1.83m 10A C13 EU Power Cord | AF568A |
| HP 1.83m 10A C13 UK Power Cord | AF570A |
| HP 1.83m 10A C13 DK Power Cord | AF566A |
| HP 1.83m 10A C13 CZ Power Cord | AF565A |
| HP 1.83m 10A C13 IT/CL Power Cord | AF571A |
| HP 2.5m 10A C13 ZA Power Cord | AF567A |
| HP 1.83m 10A C13 Power Cord | AF564A |
| HP 1.83m 10A C13 NBR14136 Brazil Power Cord | AF591A |
| HP 2.5m 16A C13 IS1293 India Power Cord | SG579A |
| HP 1.83m 10A C13 Power Cord | AF569A |
| HP 2m C13 Japan Power Cord | AF572A |
| HP 1.83m 10A C13 CN Power Cord | AF557A |
| HP 1.83m 10A C13 KR Power Cord | AF560A |
| HP 1.83m 10A C13 TW Power Cord | AF561A |
| HP 1.83m 10A C13 Power Cord | AF559A |
| HP 2.0m 10A C13 IN Power Cord | AF562A |
| HP 2.5m 10A C13 Power Cord | AF558A |
| HP 2m 10A C13-C14 Redundant Jumper Cord | AF573A |

---

**HP Backup & Recovery Software**

**HP Data Protector Express**

| | |
|---|---|
| HP Data Protector Express V5.0 for 1 Server E-LTU | TC330AAE |
| HP Data Protector Express V5.0 for 3 Servers E-LTU | TC331AAE |
| HP Data Protector Express V5.0 for 10 Servers E-LTU | TC332AAE |
| HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU | TC333AAE |

**NOTE:** One of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress

---

*Additional Options*

| | | |
|---|---|---|
| **Tape Backup** | **NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK. | |
| | HP DAT 320 USB in 1U Rack-mount Kit | AP835B |
| | HP DAT 320 SAS Internal Tape Drive<br>**NOTE:** For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended. | AJ830A |
| | HP Ultrium 920 SAS Internal Tape Drive<br>**NOTE:** For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended. | EH847A |
| | HP LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit<br>**NOTE:** Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended. | EH946B |
| | HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount<br>**NOTE:** Connection using HP Smart Array P212/Zero Memory Controller (462828-B21) recommended. | EJ014A |
| | HP 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader<br>**NOTE:** Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | BL536A |
| | HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library<br>**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | BL537A |
| | HP MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library<br>**NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended. | BL538A |

| | | |
|---|---|---|
| **Disk Backup** | **NOTE:** For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK. | |
| | **HP D2D Backup Systems with Backup Data Deduplication** | |
| | HP D2D2502i Backup System<br>**NOTE:** 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | EJ001B |
| | HP D2D2504i Backup System<br>**NOTE:** 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | EJ002B |
| | HP StorageWorks D2D4004i Backup System<br>**NOTE:** 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | EH938A |
| | HP D2D4112 Backup System<br>**NOTE:** 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric. See http://www.hp.com/storage/SPOCK for supported Fibre Channel Host Bus Adapters. | EH993B |
| | **HP RDX Removable Disk Backup Systems USB** | |
| | HP StorageWorks RDX320 Internal Removable Disk Backup System<br>**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge. | AJ767A |
| | HP StorageWorks RDX500 Internal Removable Disk Backup System<br>**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge. | AJ934A |
| | HP StorageWorks RDX1000 Internal Removable Disk Backup System<br>**NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1 TB of disk capacity per data cartridge. | BV847A |

| | | |
|---|---|---|
| **HP Storage Options** | **Storage Fibre Channel HBA**<br>**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 | |
| | **Brocade Fibre Channel HBAs** | |
| | HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter | AP769A |
| | HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter | AP770A |
| | HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter | AP767A |
| | HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter | AP768A |
| | **Emulex Fibre Channel HBAs** | |
| | HP 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter | AJ762A |
| | HP 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter | AJ763A |
| | HP FC2142SR 4Gb PCIe Host Bus Adapter | A8002A |
| | HP FC2242SR 4Gb PCIe DC Host Bus Adapter | A8003A |
| | **QLogic Fibre Channel HBAs** | |
| | HP 81Q PCI-e Fibre Channel Host Bus Adapter | AK344A |
| | HP 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter | AJ764A |
| | HP FC1142SR 4Gb PCIe Host Bus Adapter | AE311A |
| | HP FC1242SR 4Gb PCIe DC Host Bus Adapter | AE312A |
| | **Storage SCSI HBA** | |
| | HP U320e SCSI Dual Channel Host Bus Adapter<br>**NOTE:** Recommended HBA for MSL SCSI Tape Library connect. | AH627A |
| | **Converged Network Adapter** | |
| | HP CN1100E Dual Port Converged Network Adapter | BK835A |
| | HP CN1000Q Dual Port Converged Network Adapter | BS668A |
| | HP CN1000E Dual Port Converged Network Adapter | AW520A |

| | | |
|---|---|---|
| **HP Disk Storage Systems** | **MSA SAN Storage Arrays** | |
| | HP MSA70 Array | 418800-B21 |
| | **NOTE:** Supports 25 SFF drives, and SAS 3 Gb/s and SATA 1.5 Gb/s.<br>**NOTE:** Please see the QuickSpecs for additional options and configuration information at:<br>http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html | |
| | **Disk Enclosures** | |
| | HP D2600 Disk Enclosure | AJ940A |
| | HP D2700 Disk Enclosure | AJ941A |
| | **NOTE:** Please see the QuickSpecs for additional options and configuration information at:<br>http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html<br>(Worldwide) | |

*Additional Options*

| | | |
|---|---|---|
| **HP Uninterruptible Power Systems** | **HP Rack-mountable UPS** | |
| | **HP R1500 G3 Uninterruptible Power Supply (UPS)** | |
| | HP R1.5kVA G3 1U NA Uninterruptible Power System | AF469A |
| | HP R1.5kVA G3 1U JP/TW Uninterruptible Power System | AF470A |
| | HP R1.5kVA G3 1U INTL Uninterruptible Power System | AF471A |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide) | |
| | **HP Rack-Mountable R5500 UPS** | |
| | HP R5500 6000VA INTL 3U Rackmount Uninterruptible Power System | AF416A |
| | HP R5500 5000kVA NA/JP 3U Rackmount Uninterruptible Power System | AF426A |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html | |
| | **HP R/T3000 G2 Uninterruptible Power System (UPS)** | |
| | HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System | AF466A |
| | HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System | AF467A |
| | HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System | AF468A |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide) | |
| | **R5000 Uninterruptible Power System (UPS)** | |
| | HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System | AF461A |
| | HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System | AF460A |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide) | |
| | **R7000 Uninterruptible Power System (UPS)** | |
| | HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System | AF462A |
| | HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System | AF463A |
| | **NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide) | |
| | **NOTE:** For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups. | |
| | **NOTE:** For additional information on sizing your server, please reference: http://www.upssizer.com. | |
| | **NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords. | |
| **HP Power Distribution Units** | **Monitored PDUs** | |
| | **HP Monitored Power Distribution Unit: Full Rack Version** | |
| | HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit | AF504A |
| | HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit | AF506A |
| | HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit | AF508A |
| | HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit | AF510A |
| | **HP Monitored Power Distribution Unit: Half Rack Version** | |
| | HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit | AF914A |
| | HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit | AF915A |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html | |
| | **Modular PDUs 1U/0U** | |
| | **NOTE:** 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks). | |
| | HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit | 252663-B24 |
| | HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit | 252663-D72 |
| | HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit | 252663-B31 |
| | HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit | 252663-D73 |
| | **NOTE:** For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu. | |
| | **NOTE:** Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords. | |
| **HP Intelligent Power Distribution Units (iPDU)** | **iPDU Core Units** | |
| | HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF520A |
| | HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF521A |
| | HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF522A |
| | HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit | AF523A |
| | HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit | AF525A |
| | HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit | AF526A |
| | HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit | AF527A |
| | HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit | AF900A |
| | HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit | AF902A |
| | HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit | AF901A |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide) | |

*Additional Options*

| HP Rack Series | **HP Rack 10000 G2 Series** (Carbon/Graphite Metallic) | |
|---|---|---|
| | HP 10642 G2 Pallet Universal Rack | AF001A |
| | HP 10642 G2 Shock Universal Rack | AF002A |
| | HP 10642 G2 1200mm deep Shock Rack | AF092A |
| | HP 10647 G2 1200mm deep Shock Rack | AF094A |

**NOTE:** It is mandatory to use a shock pallet when shipping racks with equipment installed.

**NOTE:** Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)

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

**NOTE:** The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

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

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

**NOTE:** Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

| HP Rack Options | **HP USB Keyboard and Mouse** | |
|---|---|---|
| | HP USB BFR with PVC Free US Keyboard/Mouse Kit | 631341-B21 |
| | HP USB BFR with PVC Free UK Keyboard/Mouse Kit | 631344-B21 |
| | HP USB BFR with PVC Free FR Keyboard/Mouse Kit | 631346-B21 |
| | HP USB BFR with PVC Free ES Keyboard/Mouse Kit | 631348-B21 |
| | HP USB BFR with PVC Free DE Keyboard/Mouse Kit | 631358-B21 |
| | HP USB BFR with PVC Free JP Keyboard/Mouse Kit | 631360-B21 |
| | HP USB BFR with PVC Free IT Keyboard/Mouse Kit | 631362-B21 |
| | HP USB BFR with PVC Free CN Keyboard/Mouse Kit | 631364-B21 |
| | HP USB BFR with PVC Free AE Keyboard/Mouse Kit | 638212-B21 |
| | HP USB BFR with PVC Free RU Keyboard/Mouse Kit | 638214-B21 |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html (Worldwide)

**HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor**

| | | |
|---|---|---|
| | HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor | AZ870A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard UK Monitor | AZ871A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard DE Monitor | AZ872A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard FR Monitor | AZ873A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard IT Monitor | AZ874A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard ES Monitor | AZ875A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard DK Monitor | AZ876A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard NO Monitor | AZ877A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard SE/FI Monitor | AZ878A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard CH Monitor | AZ879A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard PT Monitor | AZ880A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard BE Monitor | AZ881A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard JP Monitor | AZ882A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard RU Monitor | AZ883A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard Intl Monitor | AZ884A |
| | HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor | AZ885A |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13731_div/13731_div.html (Worldwide)

**HP Server Console Switches**

| | | |
|---|---|---|
| | HP Server Console 0x2x8 Port Analog Switch | AF616A |
| | HP Server Console 0x2x16 Port Analog Switch | AF617A |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)

| | | |
|---|---|---|
| | HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software | AF618A |
| | HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software | AF619A |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)

**HP IP Console Switch G2 with Virtual Media & CAC**

| | | |
|---|---|---|
| | HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software | AF620A |
| | HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software | AF621A |
| | HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software | AF622A |

**NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)

**Rack Kit**

| | | |
|---|---|---|
| | HP DL360G4 1U Cable Management Arm | 365403-B21 |

| HP USB and SD Options | HP USB 04 Standard Keyboard | DT528A#ABA |
|---|---|---|
| | HP 4GB Secure Digital High Capacity Flash Media Kit | 580387-B21 |

**NOTE:** Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.

*Additional Options*

**HP Care Pack Services** **Hardware Services 4-Hour On-site Service**

| | |
|---|---|
| HP 3 year 4 hour 13x5 ProLiant DL36x Hardware Support | U4496E |
| HP 3 year 4 hour 24x7 ProLiant DL36x Hardware Support | U4497E |

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

| | |
|---|---|
| HP 3 year 6 hour 24x7 Call to Repair ProLiant DL36x Hardware Support | U4498E |

**Hardware Services 24-Hour Call to Repair On-site Service**

| | |
|---|---|
| HP 3 year 24 hour 24x7 Call to Repair ProLiant DL36x Hardware Support | UP711E |
| HP 4 year 24 hour 24x7 Call to Repair ProLiant DL36x Hardware Support | UP712E |
| HP 5 year 24 hour 24x7 Call to Repair ProLiant DL36x Hardware Support | UP713E |

**Installation & Start-up Services**

| | |
|---|---|
| HP Install ProLiant DL36x Service | U4506E |
| HP Startup ProLiant DL36x Service | U4507E |

**Support Plus 24**

| | |
|---|---|
| HP 3 year Support Plus 24 Microsoft ProLiant DL36x Service | U4509E |
| HP 3 year Support Plus 24 SuSE ProLiant DL36x Service | U6310E |

**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".

**DDR3 memory population guidelines**

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
www.hp.com/go/ddr3memory-configurator

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
    - There are three (3) channels per processor; six (6) channels per server
    - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
    - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
    - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- You can only have up to eight (8) ranks installed per channel
- You can only install two quad-rank DIMMs per channel
- You can only install two UDIMMs per channel; if available, the third slot in the channel must remain empty
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel
- Heaviest load (DIMM with most ranks) within a channel goes furthest from the chipset
- For memory mirroring mode, channel 3 must be unpopulated. Channels 1 and 2 are populated identically
- For lock-step mode, channel 3 must be unpopulated. DIMMs in channels 1 and 2 will be installed in pairs. The paired slots will be 1,4; 2,5; 3;6 on a 3DPC system or 1,4; 2,5; on a 2DPC system
- Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

| DIMM slot/capacity/populated speed table | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIMM Type | Registered DIMMS (RDIMMs) | | | | | | | | | Unbuffered with ECC DIMMs (UDIMMs) | | |
| DIMM Rank | Single Rank (1R) | Dual Rank (2R) | | | | | Quad Rank (4R) | | | Single Rank (1R) | Dual Rank (2R) | |
| DIMM Capacity | 4GB | 2GB | 4GB | 8GB | 8GB | 16GB | 4GB | 16GB | 32GB | 1GB | 2GB | 4GB |
| DIMM Native Speed (MHz) | 1333 | 1333 | 1333 | 1066 | 1333 | 1333 | 1066 | 1066 | 1066 | 1333 | 1333 | 1333 |
| Voltage | LV/Std | Std | Std | Std | LV/Std | LV | Std | Std | LV | Std | Std | LV/Std |
| | | | | | | | | | | | | |
| **SLOTS THAT CAN BE POPULATED** | | | | | | | | | | | | |
| 18 slot servers | 18 | 18 | 18 | 18 | 18 | 18 | 12 | 12 | 12 | 12 | 12 | 12 |
| | | | | | | | | | | | | |
| **MAXIMUM CAPACITY (GB)** | | | | | | | | | | | | |
| | 72 | 36 | 72 | 144 | 144 | 288 | 48 | 192 | 384 | 12 | 24 | 48 |
| | | | | | | | | | | | | |
| **POPULATED DIMM SPEED (MHz)** | | | | | | | | | | | | |
| 1 DIMM Per Channel | 1333 | 1333 | 1333 | 1066 | 1333 | 1333 | 1066 | 1066 | 1066 | 1333 | 1333 | 1333 |
| 2 DIMM Per Channel | 1333* | 1333 | 1333 | 1066 | 1333* | 1066/1033* | 800 | 800 | 800 | 1333 | 1333 | 1333* |
| 3 DIMM Per Channel | 800 | 800 | 800 | 800 | 800 | 800** | n/a | n/a | n/a | n/a | n/a | n/a |

*2DPC: LV runs at 1066, Std voltage runs at 1333
**3DPC: LV/Std voltage runs at 800
**NOTES:**

- Mixing DIMM speeds is allowed, but the system processor speed rules always override the DIMM capabilities
- If you do mix DIMM speeds, the memory bus will default to the minimum clock rate of all DIMMs in the system - even if the slower DIMM is on the other processor
- If you install 1x 1066MHz DIMM in channel 1 and 1x 1333MHz DIMM in channel 2, you still run at 1066MHz
- If you install 1x 1066MHz DIMM in channel 1 and 5x 1333MHz DIMMs with 1 DIMM Per Channel (DPC) in each of the other channels, you run at 1066MHz
- If you install 3DPC in one channel (if applicable) and 1DPC in all other channels, you run at 800MHz
- References to the above MHz speeds are for the various speeds of DDR3 DIMMs; 1333 refers to DDR3-1333, etc.

**DIMM slot and configuration diagrams**
**Basic memory slot & population diagram**

- Population order; start with "A" first, "B" second, "C" third, etc.

| 18 DIMM SLOTS (9 per CPU node) | | | | | |
|---|---|---|---|---|---|
| | CPU1 | | CPU2 | | |
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G | 1 | G | Chnl 1 |
| | 2 | D | 2 | D | |
| | 3 | A | 3 | A | |
| | | | | | |
| Chnl 2 | 4 | H | 4 | H | Chnl 2 |
| | 5 | E | 5 | E | |
| | 6 | B | 6 | B | |
| | | | | | |
| Chnl 3 | 7 | I | 7 | I | Chnl 3 |
| | 8 | F | 8 | F | |
| | 9 | C | 9 | C | |

**Standard memory configuration (1 CPU model)**

- 6GB, consisting of three (3) 2GB dual-rank PC3-10600 RDIMMs

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; empty | 1 | G; empty | Chnl 1 |
| | 2 | D; empty | 2 | D; empty | |
| | 3 | A; 2GB DIMM | 3 | A; empty | |
| | | | | | |
| Chnl 2 | 4 | H; empty | 4 | H; empty | Chnl 2 |
| | 5 | E; empty | 5 | E; empty | |
| | 6 | B; 2GB DIMM | 6 | B; empty | |
| | | | | | |
| Chnl 3 | 7 | I; empty | 7 | I; empty | Chnl 3 |
| | 8 | F; empty | 8 | F; empty | |
| | 9 | C; 2GB DIMM | 9 | C; empty | |

**Standard memory plus optional memory (1 CPU model)**

- 54GB, consisting of three (3) 2GB RDIMMs plus six (6) 8GB RDIMMs
    - 3x 2GB dual-rank PC3-10600 RDIMMs
    - 6x 8GB dual-rank PC3-8500 RDIMMs

*Memory*

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; 8GB DIMM | 1 | G; empty | Chnl 1 |
| | 2 | D; 8GB DIMM | 2 | D; empty | |
| | 3 | A; 2GB DIMM | 3 | A; empty | |
| | | | | | |
| Chnl 2 | 4 | H; 8GB DIMM | 4 | H; empty | Chnl 2 |
| | 5 | E; 8GB DIMM | 5 | E; empty | |
| | 6 | B; 2GB DIMM | 6 | B; empty | |
| | | | | | |
| Chnl 3 | 7 | I; 8GB DIMM | 7 | I; empty | Chnl 3 |
| | 8 | F; 8GB DIMM | 8 | F; empty | |
| | 9 | C; 2GB DIMM | 9 | C; empty | |

**Standard memory replaced with optional memory (1 CPU model)**
**RDIMM maximum configuration**

- 72GB, consisting of nine (9) 8GB dual-rank PC3-8500 RDIMMs

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; 8GB DIMM | 1 | G; empty | Chnl 1 |
| | 2 | D; 8GB DIMM | 2 | D; empty | |
| | 3 | A; 8GB DIMM | 3 | A; empty | |
| | | | | | |
| Chnl 2 | 4 | H; 8GB DIMM | 4 | H; empty | Chnl 2 |
| | 5 | E; 8GB DIMM | 5 | E; empty | |
| | 6 | B; 8GB DIMM | 6 | B; empty | |
| | | | | | |
| Chnl 3 | 7 | I; 8GB DIMM | 7 | I; empty | Chnl 3 |
| | 8 | F; 8GB DIMM | 8 | F; empty | |

**UDIMM maximum configuration (1 CPU model)**

- 12GB, consisting of six (6) 2GB dual-rank PC3-10600 UDIMMs

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; empty | 1 | G; empty | Chnl 1 |
| | 2 | D; 2GB DIMM | 2 | D; empty | |
| | 3 | A; 2GB DIMM | 3 | A; empty | |
| | | | | | |
| Chnl 2 | 4 | H; empty | 4 | H; empty | Chnl 2 |
| | 5 | E; 2GB DIMM | 5 | E; empty | |
| | 6 | B; 2GB DIMM | 6 | B; empty | |
| | | | | | |
| Chnl 3 | 7 | I; empty | 7 | I; empty | Chnl 3 |
| | 8 | F; 2GB DIMM | 8 | F; empty | |
| | 9 | C; 2GB DIMM | 9 | C; empty | |

**Standard memory replaced with optional memory (2 CPU model)**
**RDIMM maximum configuration**

- 384GB, consisting of twelve (12) 32GB quad-rank PC3L-8500 RDIMMs

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; empty | 1 | G; empty | Chnl 1 |
| | 2 | D; 32GB DIMM | 2 | D; 32GB DIMM | |
| | 3 | A; 32GB DIMM | 3 | A; 32GB DIMM | |
| | | | | | |
| Chnl 2 | 4 | H; empty | 4 | H; empty | Chnl 2 |
| | 5 | E; 32GB DIMM | 5 | E; 32GB DIMM | |
| | 6 | B; 32GB DIMM | 6 | B; 32GB DIMM | |
| | | | | | |
| Chnl 3 | 7 | I; empty | 7 | I; empty | Chnl 3 |
| | 8 | F; 32GB DIMM | 8 | F; 32GB DIMM | |
| | 9 | C; 32GB DIMM | 9 | C; 32GB DIMM | |

**UDIMM maximum configuration (2 CPU model)**

- 24GB, consisting of twelve (12) 2GB dual-rank PC3-10600 UDIMMs

| | CPU1 | | CPU2 | | |
|---|---|---|---|---|---|
| | slot # | population order | slot # | population order | |
| Chnl 1 | 1 | G; empty | 1 | G; empty | Chnl 1 |
| | 2 | D; 2GB DIMM | 2 | D; 2GB DIMM | |
| | 3 | A; 2GB DIMM | 3 | A; 2GB DIMM | |
| | | | | | |
| Chnl 2 | 4 | H; empty | 4 | H; empty | Chnl 2 |
| | 5 | E; 2GB DIMM | 5 | E; 2GB DIMM | |
| | 6 | B; 2GB DIMM | 6 | B; 2GB DIMM | |
| | | | | | |
| Chnl 3 | 7 | I; empty | 7 | I; empty | Chnl 3 |
| | 8 | F; 2GB DIMM | 8 | F; 2GB DIMM | |
| | 9 | C; 2GB DIMM | 9 | C; 2GB DIMM | |

**NOTE:** Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB
- 32GB = 32768MB

*Memory*

**DDR3 memory options part number decoder**



HP ggggg eRxff PC3 v-wwwwwm-aa bb-ccd Kit
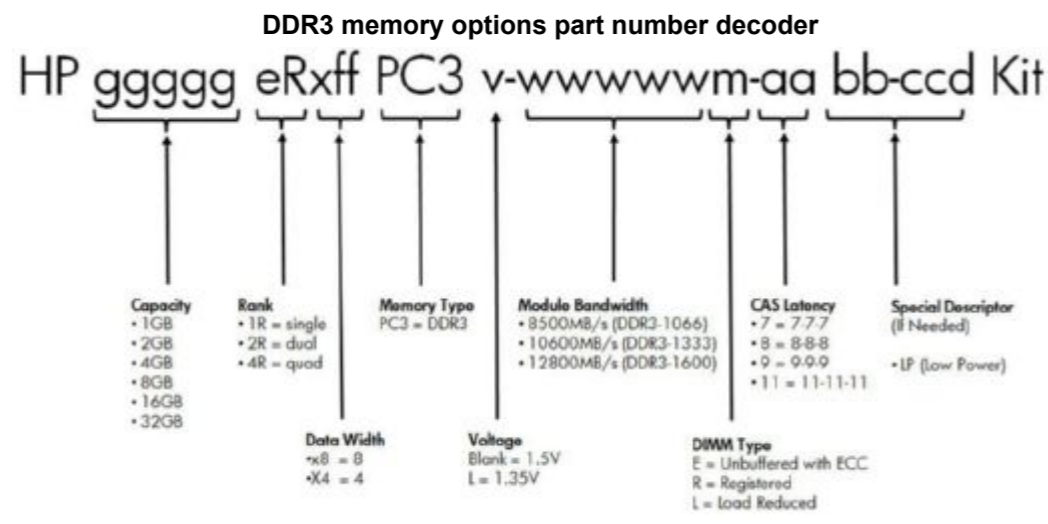
**Following are memory options available from HP:**

| HP Memory | **Registered DIMMs (RDIMMs)** | |
|---|---|---|
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500656-B21 |
| | HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500658-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 593339-B21 |
| | HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604504-B21 |

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

| | HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit | 500662-B21 |
|---|---|---|
| | HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit | 604506-B21 |
| | HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit | 500666-B21 |
| | HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit | 627812-B21 |
| | HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit | 627814-B21 |

**NOTE:** Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.

**Unbuffered with ECC DIMMs (UDIMMs)**

| | HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500668-B21 |
|---|---|---|
| | HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500670-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit | 500672-B21 |
| | HP 4GB (1x4GB) Dual Rank x8 PC3L-10600 (DDR3-1333) Unbuffered CAS-9 Low Power Memory Kit | 619488-B21 |

**NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.
**NOTE:** Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.
**NOTE:** PC3L is a low voltage memory.

*Storage*

1-8    8 x SFF SAS Hot Pluggable Hard Drive Bays. Optical Media Bay not available for this configuration
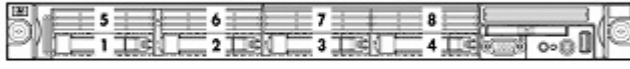
1-4    4 x SFF SAS Hot Pluggable Hard Drives

A    Optical Media Bay

5, 6    Blanks (these HDD Bays are not available when DVD installed)

---

## Drive Support

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| **Removable Media** | | | |
| HP DL360 SL 12.7mm SATA DVD-RW | 1 | Slim Line Bay | Integrated SATA |
| HP DL360 SL 12.7mm SATA DVD | 1 | Slim Line Bay | Integrated SATA |

**NOTE:** DVD/Optical drive options supported on 4 hard drive models only.

---

**Hard Drives**
**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.
**NOTE:** Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

**SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 900GB 6G SAS 10K | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 600GB 6G SAS 10K | | | HP Smart Array P212/256 MB Controller |
| 450GB 6G SAS 10K | | | HP Smart Array P411/256 MB Controller |
| 300GB 6G SAS 10K | | | HP Smart Array P411/512 MB BBWC Controller |
| 300GB 6G SAS 15K | | | |
| 146GB 6G SAS 15K | | | |
| 72GB 6G SAS 15K | | | |

**SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 1TB 6G SAS 7.2K | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 500GB 6G SAS 7.2K | | | HP Smart Array P212/256 MB Controller |
| | | | HP Smart Array P411/256 MB Controller |
| | | | HP Smart Array P411/512 MB BBWC Controller |

**SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 1TB 3G SATA 7.2K | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 500GB 3G SATA 7.2K | | | HP Smart Array P212/256 MB Controller |
| | | | HP Smart Array P411/256 MB Controller |
| | | | HP Smart Array P411/512 MB BBWC Controller |

**SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 400GB 3.0G SATA SSD | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 200GB 3.0G SATA SSD | | | HP Smart Array P212/256 MB Controller |
| 100GB 3.0G SATA SSD | | | HP Smart Array P411/256 MB Controller |
| | | | HP Smart Array P411/512 MB BBWC Controller |

**6G SAS Hot Plug Enterprise Performance Solid State Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 400GB 6G SAS SLC SFF | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 200GB 6G SAS SLC SFF | | | HP Smart Array P212/256 MB Controller |
| | | | HP Smart Array P411/256 MB Controller |
| | | | HP Smart Array P411/512 MB BBWC Controller |

**6G SAS Hot Plug Enterprise Mainstream Solid State Drives**

| | Quantity Supported | Position Supported | Controller |
|---|---|---|---|
| 800GB 6G SAS MLC SFF | 8 | 1-8 | HP Smart Array P212/Zero Memory Controller |
| 400GB 6G SAS MLC SFF | | | HP Smart Array P212/256 MB Controller |
| 200GB 6G SAS MLC SFF | | | HP Smart Array P411/256 MB Controller |
| | | | HP Smart Array P411/512 MB BBWC Controller |

*Storage*

**External Storage**

| | Quantity Supported | Position Supported | Host Controller or Adapter |
|---|---|---|---|
| 70 Modular Smart Array | Up to 2 | External | HP Smart Array P212/256 MB Controller |
| | Up to 4 | External | HP Smart Array P411/512 MB BBWC Controller<br>HP Smart Array P411/256 MB Controller<br>HP Smart Array P411/1G Flash Backed Write Cache<br>HP Smart Array P812/1G Flash Backed Cache Controller |
| D2600 Disk Enclosure | Up to 4 | External | HP Smart Array P212/256 MB Controller |
| | Up to 8 | External | HP Smart Array P411/256 MB Controller<br>HP Smart Array P411/512 MB BBWC Controller<br>HP Smart Array P411/1G Flash Backed Write Cache<br>HP Smart Array P812/1G Flash Backed Cache Controller |
| D2700 Disk Enclosure | Up to 2 | External | HP Smart Array P212/ 256 MB Controller |
| | Up to 4 | External | HP Smart Array P411/256 MB Controller<br>HP Smart Array P411/512 MB BBWC Controller<br>HP Smart Array P411/1G Flash Backed Write Cache<br>HP Smart Array P812/1G Flash Backed Cache Controller |

**Tape and Disk Backup**

**NOTE:** For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see:
http://www.hp.com/go/tape. For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the
complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk
and tape backup products see: http://www.hp.com/storage/SPOCK.

| | Position Supported | Controller | Part Number |
|---|---|---|---|
| **HP SCSI Tape Drives**<br>LTO-1 Ultrium 232<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-3 Ultrium 960<br>LTO4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>DAT 40<br>DAT 72<br>DAT 160<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter | 412911-B21 |
| **HP USB Tape Drives**<br>DAT 40<br>DAT 72<br>DAT 160<br>DAT 320<br>1U USB Rack-Mount Kit | External | USB 2.0 Port | N/A |
| **HP SAS Tape Drives**<br>DAT 160<br>DAT 320<br>LTO-2 Ultrium 448<br>LTO-3 Ultrium 920<br>LTO-4 Ultrium 1760<br>LTO-4 Ultrium 1840<br>LTO-5 Ultrium 3000<br>LTO-5 Ultrium 3280<br>1U Rack-Mount Kit<br>3U Rack-Mount Kit | External | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller<br><br>**NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 462828-B21 |
| **HP SCSI Tape Autoloaders**<br>DAT 72x10 Autoloader<br>1/8 G2 Autoloader | External | HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter<br>**NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 412911-B21 |
| **HP SCSI Tape Libraries, External**<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | HP U320e SCSI Dual Channel Host Bus Adapter<br><br>**NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | AH627A |
| **HP SAS Tape Autoloaders and Libraries**<br>1/8 G2 Autoloader<br>MSL2024<br>MSL4048<br>MSL8096 | External | HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller<br><br>**NOTE:** Please check the full compatibility information at: http://www.hp.com/storage/SPOCK | 462828-B21 |
| **HP Fibre Channel Tape Libraries**<br>MSL2024<br>MSL4048<br>MSL8096<br>MSL6000 | External | Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs. | N/A |
| **HP USB RDX Removable Disk Backup System**<br>RDX160<br>RDX320<br>RDX500<br>RDX750<br>RDX1TB | External | USB 2.0 Port | N/A |
| **HP D2D Backup Systems, iSCSI**<br>D2D2500i<br>D2D4000i | External | Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended. | |
| **HP D2D Backup Systems, Fibre Channel**<br>D2D4000fc | External | Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/storage/SPOCK | N/A |

*Power Specifications*

### HP 460W Common Slot Gold Hot Plug Power Supply Kit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | 503296-B21 | | | | | | |
| Input Voltage Range ( V rms ) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) ( Hz ) | 50/60 | | | | | | |
| Nominal Input Voltage ( Vrms ) | **100** | **120** | **200** | **208** | **220** | **230** | **240** |
| Maximum Rated Output Wattage Rating | 460 | 460 | 460 | 460 | 460 | 460 | 460 |
| Nominal Input Current ( A rms ) | 5.5 | 4.5 | 2.6 | 2.5 | 2.4 | 2.3 | 2.2 |
| Maximum Rated Input Wattage Rating ( Watts ) | 526 | 520 | 505 | 505 | 503 | 503 | 503 |
| Maximum Rated VA ( Volt-Amp ) | 548 | 542 | 527 | 527 | 524 | 524 | 524 |
| Efficiency ( % ) | 87.5 | 88.5 | 91 | 91 | 91.5 | 91.5 | 91.5 |
| Power Factor | | | | 0.97 | | | |
| Leakage Current ( mA ) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current ( A peak ) | | | | 30 | | | |
| Maximum Inrush Current duration ( mS ) | | | | 20 | | | |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 1794 | 1773 | 1725 | 1725 | 1715 | 1715 | 1715 |

### HP 460W Common Slot Platinum Hot Plug Power Supply Kit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | 593188-B21 | | | | | | |
| Input Voltage Range ( V rms ) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) ( Hz ) | 50/60 | | | | | | |
| Nominal Input Voltage ( Vrms ) | **100** | **120** | **200** | **208** | **220** | **230** | **240** |
| Maximum Rated Output Wattage Rating | 460 | 460 | 460 | 460 | 460 | 460 | 460 |
| Nominal Input Current ( A rms ) | 5.3 | 4.3 | 2.5 | 2.4 | 2.3 | 2.2 | 2.1 |
| Maximum Rated Input Wattage Rating ( Watts ) | 512 | 505 | 493 | 493 | 492 | 492 | 491 |
| Maximum Rated VA ( Volt-Amp ) | 526 | 518 | 506 | 506 | 505 | 505 | 504 |
| Efficiency ( % ) | 89.8 | 91.2 | 93.2 | 93.3 | 93.5 | 93.6 | 93.6 |
| Power Factor | | | | 0.985 | | | |
| Leakage Current ( mA ) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current ( A peak ) | | | | 30 | | | |
| Maximum Inrush Current duration ( mS ) | | | | 20 | | | |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 1747 | 1722 | 1683 | 1682 | 1679 | 1678 | 1677 |

### HP 750W Common Slot Gold Hot Plug Power Supply Kit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | 512327-B21 | | | | | | |
| Input Voltage Range ( V rms ) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) ( Hz ) | 50/60 | | | | | | |
| Nominal Input Voltage ( Vrms ) | **100** | **120** | **200** | **208** | **220** | **230** | **240** |
| Maximum Rated Output Wattage Rating | 750 | 750 | 750 | 750 | 750 | 750 | 750 |
| Nominal Input Current ( A rms ) | 8.9 | 7.4 | 4.3 | 4.1 | 3.9 | 3.7 | 3.6 |
| Maximum Rated Input Wattage Rating ( Watts ) | 857 | 847 | 824 | 824 | 820 | 820 | 820 |
| Maximum Rated VA ( Volt-Amp ) | 894 | 884 | 859 | 854 | 854 | 854 | |
| Efficiency ( % ) | 87.5 | 88.5 | 91 | 91 | 91.5 | 91.5 | 91.5 |
| Power Factor | | | | 0.97 | | | |
| Leakage Current ( mA ) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current ( A peak ) | | | | 30 | | | |
| Maximum Inrush Current duration ( mS ) | | | | 20 | | | |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 2925 | 2892 | 2812 | 2812 | 2797 | 2797 | 2797 |

### HP 750W Common Slot Platinum Hot Plug Power Supply Kit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | 593831-B21 | | | | | | |
| Input Voltage Range ( V rms ) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) ( Hz ) | 50/60 | | | | | | |
| Nominal Input Voltage ( Vrms ) | **100** | **120** | **200** | **208** | **220** | **230** | **240** |
| Maximum Rated Output Wattage Rating | 750 | 750 | 750 | 750 | 750 | 750 | 750 |
| Nominal Input Current ( A rms ) | 8.6 | 7.1 | 4.2 | 4.0 | 3.8 | 3.6 | 3.4 |
| Maximum Rated Input Wattage Rating ( Watts ) | 841 | 828 | 809 | 808 | 807 | 806 | 805 |
| Maximum Rated VA ( Volt-Amp ) | 863 | 850 | 830 | 829 | 828 | 827 | 826 |
| Efficiency ( % ) | 89.2 | 90.6 | 92.7 | 92.8 | 93 | 93.1 | 93.2 |
| Power Factor | | | | 0.985 | | | |
| Leakage Current ( mA ) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current ( A peak ) | | | | 30 | | | |
| Maximum Inrush Current duration ( mS ) | | | | 20 | | | |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 2868 | 2825 | 2761 | 2757 | 2753 | 2749 | 2747 |

### HP 1200W Common Slot Silver Hot Plug Power Supply Kit

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | 500172-B21 | | | | | | |
| Input Voltage Range ( V rms ) | 100 to 240 | | | | | | |
| Frequency Range (Nominal) ( Hz ) | 50/60 | | | | | | |
| Nominal Input Voltage ( Vrms ) | **100** | **120** | **200** | **208** | **220** | **230** | **240** |
| Maximum Rated Output Wattage Rating | 800 | 900 | 1200 | 1200 | 1200 | 1200 | 1200 |
| Nominal Input Current ( A rms ) | 9.7 | 9.0 | 7.0 | 6.8 | 6.4 | 6.1 | 5.9 |
| Maximum Rated Input Wattage Rating ( Watts ) | 930 | 1034 | 1348 | 1348 | 1348 | 1348 | 1348 |
| Maximum Rated VA ( Volt-Amp ) | 970 | 1079 | 1406 | 1406 | 1406 | 1406 | 1406 |
| Efficiency ( % ) | 86 | 87 | 89 | 89 | 89 | 89 | 89 |
| Power Factor | | | | 0.97 | | | |
| Leakage Current ( mA ) | 0.42 | 0.50 | 0.83 | 0.87 | 0.92 | 0.96 | 1.00 |
| Maximum Inrush Current ( A peak ) | | | | 30 | | | |
| Maximum Inrush Current duration ( mS ) | | | | 20 | | | |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 3174 | 3530 | 4600 | 4600 | 4600 | 4600 | 4600 |

### HP 1200W Common Slot Silver Hot Plug Power Supply Kit

| | | | |
|---|---|---|---|
| Part Number | 437573-B21 | | |
| Input Voltage Range ( V rms ) | 36-72 | | |
| Frequency Range (Nominal) ( Hz ) | DC | | |
| Nominal Input Voltage ( Vrms ) | **36** | **48** | **72** |
| Maximum Rated Output Wattage Rating | 1200 | 1200 | 1200 |
| Nominal Input Current ( A rms ) | 38 | 28 | 19 |
| Maximum Rated Input Wattage Rating ( Watts ) | 1380 | 1350 | 1365 |
| Maximum Rated VA ( Volt-Amp ) | 1380 | 1350 | 1365 |
| Efficiency ( % ) | 87 | 89 | 88 |
| Power Factor | | N/A | |
| Leakage Current ( mA ) | | N/A | |
| Maximum Inrush Current ( A peak ) | 20 | 25 | 35 |
| Maximum Inrush Current duration ( mS ) | 1 | 1 | 3 |
| Maximum British Thermal Unit Rating ( BTU-Hr ) | 4713 | 4610 | 4662 |

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

*Technical Specifications*

| | | | |
|---|---|---|---|
| **System Unit** | **Dimensions** (H x W x D) (with bezel) | 1.70 x 16.78 x 27.25 in (4.32 x 42.62 x 69.22 cm) | |
| | **Weight** (approximate) | Maximum (all hard drives, power supplies, and processors installed) | 39.5 lb (17.92 kg) |
| | | Minimum (one hard drive, power supply, and processor installed) | 32 lb (14.51 kg) |
| | **Input Requirements** (for Standard 460W PSU, see power specifications tables for detail on 460W, 750W and 1200W power supplies) | Rated Line Voltage | 100 to 240 VAC |
| | | Rated Input Current | 4.5 Amps (at 120VAC) to 2.2 Amps (at 240 VAC) |
| | | Rated Input Frequency | 50 to 60 Hz |
| | **BTU Rating** | Maximum | 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) |

**Power Specifications**     To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

- Click on the system of interest. Example: DL360 G7
- Follow the instructions of the next screens.

| | | | |
|---|---|---|---|
| **Power Supply Output** (per power supply) | Rated Steady-State Power | 460 W (at 100 VAC), 460 W (at 200 VAC) | |
| | Maximum Peak Power | 460 W (at 100 VAC), 460 W (at 200 VAC) | |

**NOTE:** See Power Supply Specifications tables for complete details on 460W PSU and optional 750W and 1200W Power Supply Options.

| | | |
|---|---|---|
| **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. |
| **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 (Single Processor, Note 1)**

| | |
|---|---|
| L WAd | 4.3 B Average Bystander |
| L pAm | 27 dBA |

**Operating**

| | |
|---|---|
| L WAd | 4.8 B Average Bystander |
| L pAm | 32 dBA |

**Idle (Dual Processors, Note 2)**

| | |
|---|---|
| L WAd | 4.9 B Average Bystander |
| L pAm | 33 dBA |

**Operating**

| | |
|---|---|
| L WAd | 5.4 B Average Bystander |
| L pAm | 38 dBA |

**NOTES:**
Note 1) Configuration tested included an Intel X5520 quad-core 2.27GHz processor, one 72GB SAS HDD, four 250GB 5400 rpm SATA hard drives, six system fans, three 4GB(2x2GB) DIMM's, and one power supply (1P SKU).
Note 2) Configuration tested included two Intel X5520 quad-core 2.27GHz processors, one 72GB SAS HDD, four 250GB 5400 rpm SATA hard drives, eight system fans, six 4GB(2x2GB) DIMM's, and one power supply (2P SKU).
Note 3) Values are subject to change without notification and are for reference only.
Note 4) Performance of system, options, and ancillary equipment will vary depending on the system configuration.
Note 5) Levels presented do not account for non-Hewlett-Packard installed hardware.

| | | |
|---|---|---|
| **Emissions Classification (EMC)** | FCC Rating | Class A |
| | Normative Standards | CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22; K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1 |

**NOTE:** Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

*Technical Specifications*

| | | |
|---|---|---|
| **Integrated Lights-Out 3 (iLO 3) integrated on system board** | **Architecture** | PCI Express based health and remote management ASIC |
| | **Processor** | PCI Express RISC processor core running at 250MHz |
| | **Upgradeability** | Option firmware upgradeable via Flash ROM. |
| | **Video Support** | 1600 x 1200 DVR max resolution |
| | **Interfaces** | One Ethernet Sideband connection (10/100/1000 Mb/s) |
| | | One Ethernet network connection (10/100Mb/s) |
| | **Memory** | 128-MB SDRAM with ECC |
| | **Operating System Support** | Microsoft Windows 2008 R2 |
| | | Microsoft Windows 2008 (32 bit and 64 bit) |
| | | Microsoft Windows Server 2008 Standard Edition (32bit and 64bit) |
| | | Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit) |
| | | Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Embedded Systems Standard Edition, Enterprise Edition |
| | | Red Hat Enterprise Linux 5.4 (32 bit and 64 bit) |
| | | SUSE LINUX Enterprise Server 11 (32bit and 64bit) |
| | | SUSE LINUX Enterprise Server 10 (32bit and 64bit) |
| | | VMware ESX 4.0 |
| | | VMware ESX 3.5.0 |
| | **Client System Support** | Microsoft Windows 7 |
| | | Microsoft Windows XP Professional Edition |
| | | Microsoft Windows Vista Business and Ultimate Editions |
| | | Red Hat Enterprise Desktop 5.00 |
| | | SUSE Linux Enterprise Desktop 11 |
| | | SUSE Linux Enterprise Desktop 10 |
| | **Client Browser Support** | Microsoft Internet Explorer 8 |
| | | Microsoft Internet Explorer 7 |
| | | Microsoft Internet Explorer 6 |
| | | Firefox 3.5 (on supported Windows and Linux systems) |
| | | Firefox 3.0 (on supported Windows and Linux systems) |
| | **Command Line Support** | Secure Shell and serial port access |
| | **Security** | Secure Socket Layer |
| | | Secure Shell version 2 (Password and certificate) |
| | | Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface |
| | | AES encryption of video |
| | | RC4 encryption of video |
| | **Directory Support Services** | Active Directory v1.0 (Windows 2003) |
| | **Driver Support** | HP ProLiant iLO 3 Management Controller Driver Package |
| | | iLO Management Channel Interface Driver |
| | **Management protocols supported** | SNMP, IPMI 2.0 (System and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML |

| | | |
|---|---|---|
| **Smart Array P410i Controller** | **Dimensions** | Embedded |
| | **Disk Drive and Enclosure Interface - Transfer rate** | 6Gb/s SAS (Serial Attached SCSI) |
| | | 3Gb/s SATA (Serial ATA) |
| | **SAS Connectors** | 2 internal 4X connectors |
| | **Cache Memory Speed** | DDR2-800MHz with 40 or 72-bit wide bus |
| | **Server Interface** | x4 PCIe 2.0 provides 2GB/s maximum bandwidth |
| | **SAS Speed** | 8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth |
| | **Cache Memory** | Zero Memory RAID has no cache memory |
| | | 40-bit 256MB ECC protected cache (battery upgrade available) |
| | | 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC |
| | **Logical Drives Supported** | Zero Memory, Up to 2 logical volumes (8 physical drives) |
| | | Up to 64 logical drives with cache |
| | **Host Memory Addressing** | 64-bit, supporting greater than 4GB server memory space |
| | **RAID Support** | RAID 6, 6+0 (Advanced Data Guarding) |
| | | **NOTE:** RAID 6, 6+0 can be enabled with one of the following combinations: |
| | | • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades |
| | | • 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades |
| | | • 1G FBWC and Smart Array Advanced Pack License key option upgrades |
| | | RAID 5, 5+0 (Distributed Data Guarding) |
| | | **NOTE:** A minimum or 256 MB cache is required to enable RAID 5, 5+0 support |
| | | RAID 1+0 (Striping & Mirroring) |
| | | RAID 0 (Striping), RAID 1 (Mirroring) |

| | | | |
|---|---|---|---|
| **Embedded NC382i Dual Port Multifunction Gigabit Server Adapter** | **Network Interface Compatibility** | 10Base-T/100Base-TX/1000Base-TX | |
| | | IEEE 802.3 10Base-T | |
| | | IEEE 802.3ab 1000Base-T | |
| | | IEEE 802.3u 100Base-TX | |
| | | IEEE 802.3ad 1000Base-TX | |
| | | IEEE 802.1p 100Base-TX | |
| | | IEEE 802.1q 100Base-TX | |
| | **Data Transfer Method** | PCI Express, four lanes (x4) | |
| | **Controller** | BCM5709C | |
| | **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** | Two RJ-45 | |
| | **Cable Support** | 10Base-T | Categories 3, 4 or 5 UTP; up to 328 ft (100 m) |
| | | 100Base-TX | Category 5 or higher UTP; up to 328 ft (100 m) |
| | | 1000BaseTX | Category 5 or higher UTP; up to 328 ft (100 m) |

*Technical Specifications*

**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.

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