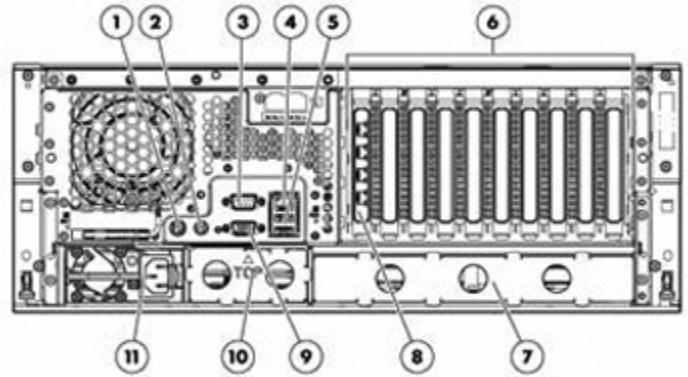
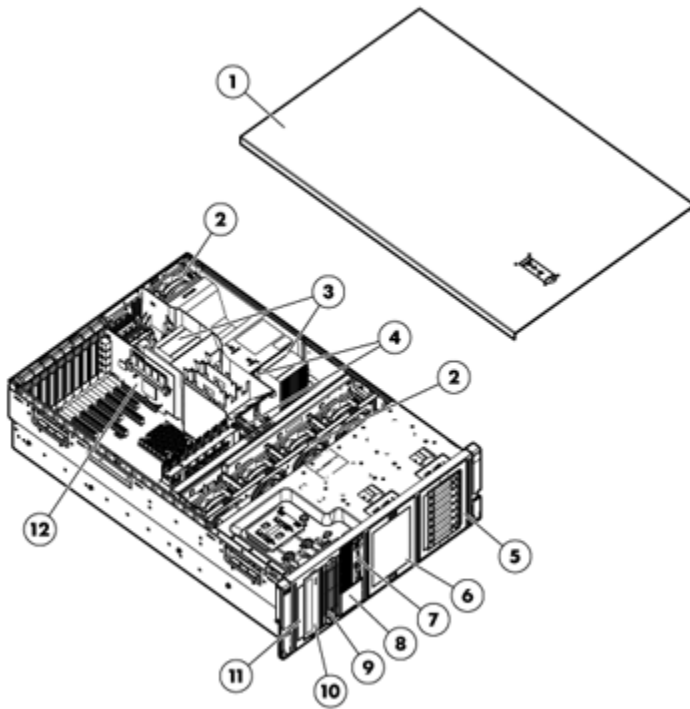


Overview

HP ProLiant DL370 G6 (Rack)



Front View:

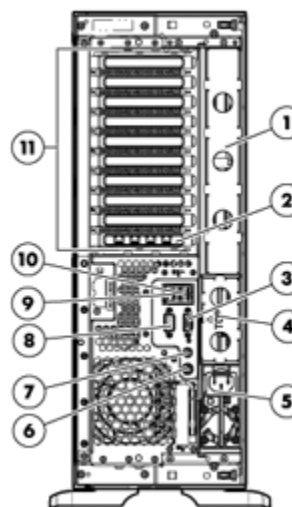
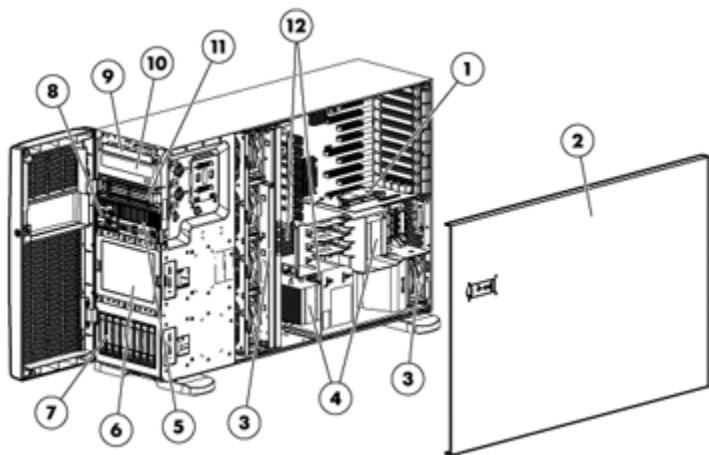
1. Quick removal access panel
2. Three Hot-plug fans (standard) Five (optional)
3. Intel Quad-Core Processor (Performance model includes two processors)
4. Eighteen slots for DDR3 Registered or Unbuffered Memory
5. SAS/SATA drive cage
6. Optional drive cage bay
7. Power on/standby button
8. System Insight Display
9. Removal media bay
10. DVD-ROM drive
11. Optional slimline optical drive bay
12. 9 Available PCI-Express Gen2 slots

Rear View:

1. Mouse connector
2. Keyboard connector
3. Serial connector
4. iLO 2 connector
5. Two USB connectors
6. 9 Available PCI-Express Gen2 expansion slots
7. Expansion slot riser bay
8. Four NIC connectors
9. Video connector
10. Power supply bay 2
11. Power supply bay 1 (populated)

Overview

HP ProLiant ML370 G6 (Tower)



Front View:

1. Three Hot-plug fans (standard) Five (optional)
2. Quick removal access panel
3. Intel Quad-Core Processor (Performance model includes two processors)
4. Eighteen slots for DDR3 Registered or Unbuffered Memory
5. SAS/SATA drive cage
6. Optional drive cage bay
7. Power on/standby button
8. System Insight Display
9. Removal media bay
10. DVD-ROM drive
11. Optional slimline optical drive bay
12. 9 Available PCI-Express Gen2 slots

Rear View:

1. Expansion slot riser bay
2. Four NIC connectors
3. Serial connector
4. Power supply bay 2
5. Power supply bay 1 (populated)
6. Mouse connector
7. Keyboard connector
8. Video connector
9. Two USB connectors
10. iLO 2 connector
11. 9 Available PCI-Express Gen2 expansion slots

What's New

- Announcing support for:
 - TCP/IP Offload Engine (TOE) via the HP ML and DL370 G6 Smart-mini DIMM module

At A Glance

The next generation of the HP ProLiant ML370 (expandable tower chassis) and the new HP ProLiant DL370 (4U rack optimized chassis) deliver Industry-leading management tools, leading performance, expandability, flexibility and the latest energy efficient technologies. These servers are well-suited for deployment in growing businesses, remote office sites, or datacenters and have been designed to bring you (our customer) the utmost confidence to run your business.

Features included in both the HP ProLiant ML370 G6 and the HP ProLiant DL370 G6:

- **Processors:**
 - Up to two Intel® Xeon® 5500 Series processors
 - Intel® 5520 chipset
- **Memory:**
 - 18 DIMM slots
 - Up to 144GB, using PC3-10600R or PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 3 DIMMs per Channel in 18 slots.
 - Up to 24GB, using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when fully

Overview

populated at 2 DIMMs per Channel in 12 slots.

- **Storage Controller:**
 - Entry Models: HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
NOTE: Entry Models available for ML370 G6 models only.
 - Base Models: HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
 - Performance Models: HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0)
 - Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP)
- **Internal Drive Support:**
 - Up to 24 small form factor (SFF) or 14 large form factor (LFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
 - Standard half-height DVD-ROM (all models)
 - Two open half-height media bays available for tape drives, optical media, optional SAS HDD cage
- **Network Controller:**
 - HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- **Expansion Slots:**
 - Nine PCIe2 slots available (see "Standard Features -Expansion Slots" section below for more details)
- **Graphic Cards:**
 - Supports up to 3 x 300W Graphic Cards via Graphic Card Power Adapter kit
NOTE: 2 PCIe Gen2 x16 (mechanical/electrical); 1 PCIe Gen2 x16 (mechanical) x8 (electrical)
- **Ports:**
 - USB 2.0 support
 - 5 total ports: (2) ports up front; (2) ports in back; (1) port internal
 - 1 internal Secure Digital (SD) slot
- **Redundancy:**
 - Multiple layers of fault tolerance through critical component redundancy (power supply and fan redundancy), mirrored memory, embedded RAID capability, and full-featured remote Lights-Out management
- **Power Sources:**
 - Dual Common Slot Bay for Right Sized, Hot plug and Redundant Power options
 - HP 1200W CS HE Silver Power Supply (optional)
 - HP 750W CS HE Gold Power Supply (standard on some models)
 - HP 460W CS HE Gold Power Supply (standard on some models)
- **Management:**
 - HP Insight Control suite delivers foundation management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management. Now with Dynamic Power Capping technology, ICE can potentially triple the capacity of your data center by reclaiming trapped power and cooling capacity. Learn more at www.hp.com/go/ice
 - HP ProLiant Onboard Administrator (powered by the HP Integrated Lights-Out 2 management processor) for simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
 - Integrated Lights-Out 2 Advanced unlocks the full capabilities of the ProLiant Onboard Administrator with high performance Integrated Remote Console, multi-user console sharing, video record and replay, and virtual media, including virtual folders for rapid server updates.
 - Convenient Systems Insight Display for quick and easy front view server diagnostics
 - ProLiant Essential Foundation Pack standard, including HP Systems Insight Manager, SmartStart, SmartStart Scripting Toolkit, Subscriber's Choice and ROM Based Setup Utility (RBSU)
 - Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health, UID, and SmartStart
- **Form Factor:**
 - 4U Tower Chassis and 4U Rack Optimized Chassis
 - Redesigned 4U Tower Chassis and the new 4U Rack Optimized Chassis to better meet our customer's density requirements
- **Operating Systems and Virtualization Software Support for ProLiant Servers:**
 - Supports Windows, RHEL, SLES, OEL, Solaris, VMware, and Citrix Essentials for XenServer
- **Deployment/Serviceability:**
 - Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability

Overview

- Tool-less access to all system components for easy in rack serviceability
- Customer Self Repair (CSR): HP products are designed with many CSR parts to minimize repair time and allow for greater flexibility in performing defective parts replacement
- **Warranty:**
 - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one-year warranty. SAS Enterprise drives have a three-year warranty.
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>

Standard Features

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

Processor

One of the following depending on Model

Quad-Core Processors

Intel® Xeon® Processor W5580 (3.20 GHz, 8MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/2)

Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)

Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)

Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)

Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)

NOTE: Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.

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 5500 Series, the letter preceding the model number indicates the performance/wattage of the processor. "X" denotes High Performance/Wattage; "E" denotes Enterprise Performance/Wattage (Mainstream); and "L" denotes Lower Wattage.

Cache Memory

One of the following depending on Model

8MB (1 x 8MB) Level 3 cache

NOTE: All processor models except for those identified below.

4MB (1 x 4MB) Level 3 cache

NOTE: For processors E5506/E5504/E5502.

Chipset

Intel® 5520 chipset

NOTE: For more information regarding Intel chipsets, please see the following URL:

<http://www.intel.com/products/server/chipsets/>.

Upgradeability

Upgradeable to 2 processors

Memory Protection

Advanced ECC

Mirroring mode

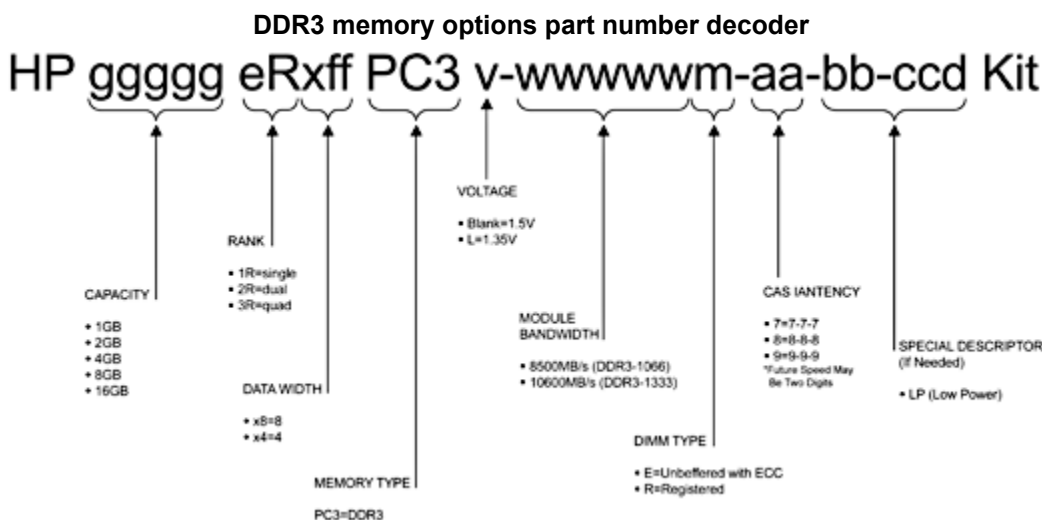
Lock-step mode

Standard Features

Memory	Type	DDR3 Registered (RDIMM) or Unbuffered (UDIMM)
	Standard (Performance Models)	12 GB (6 x 2 GB) RDIMM
	Standard (Base Models)	6 GB (3 x 2 GB) RDIMM
	Standard (Entry Model)	4 GB (2 x 2 GB) UDIMM
	Maximum (RDIMM)	144 GB (18 x 8 GB) for Registered Memory configurations
	Maximum (UDIMM)	24 GB (12 x 2 GB) for Unbuffered Memory configurations

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.

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 HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter

Expansion Slots	Expansion Slots #	Technology	Width	Connector Width*	Form Factor	Notes
	1	PCIe	x4	x8	Half length, full height slot	
	2	PCIe2	x4	x8	Full length, full height slot	
	3	PCIe2	x16	x16	Full length, full height slot	
	4	PCIe2	x4	x8	Full length, full height slot	
	5	PCIe2	x4	x8	Full length, full height slot	
	6	PCIe2	x8	x16	Full length, full height slot	
	7	PCIe2	x4	x8	Full length, full height slot	
	8	PCIe2	x16	x16	Full length, full height slot	
	9	PCIe2	x4	x8	Full length, full height slot	

Standard Features

10	PCIe2	X8	X8	Half length, full height slot	Utilized by NIC controller "Use the correct model number for the NIC"
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* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.

Storage Controller

One of the following depending on Model

Entry Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
Base Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
Performance Models	HP Smart Array P410i/512 MB BBWC Controller (RAID 0/1/1+0/5/5+0/6)

Available upgrades: 256MB, 512MB with BBWC, Battery kit upgrade (for BBWC), and Smart Array Advanced Pack (SAAP).

Storage

Diskette Drive	None Standard
Optical Drive	SATA DVD ROM (standard in all models)
Hard Drives	None Standard

Maximum Internal Storage Type

Hot Plug SFF SAS	7.20TB	24 x 300GB
Hot Plug LFF SAS	14 TB	14 x 1TB

Interfaces

Serial	1 (rear)
Pointing Device (Mouse)	1
VGA	1 (+1 front VGA on rack models)
Keyboard	1
Network RJ-45	4 (rear)
ILO 2.0 remote management port	1
SD slot	1
USB 2.0 Ports	5 (2 on the rear, 2 on the front, 1 internal)
	NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html
Dedicated USB 2.0 Port	1 (available for DAT USB tape connectivity)
	NOTE: Internal USB ports are optimal for the attachment of HP DAT USB Internal Tape Drives

Graphics

Integrated ATI RN50, 64 MB 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 2 remote console is 1280 x 1024.

Standard Features

Form Factor 4U Rack and Tower form factor (7 in, 17.8 cm)

HP Insight Control suite

HP Insight Control suite delivers essential management, including proactive health management, lights out remote control, optimization of power usage, rapid server deployment, performance analysis, vulnerability scanning and patch management and virtual machine management.

HP Insight Control suite installs and licenses the following components by default using a wizard-based integrated installer:

- HP Systems Insight Manager
- HP iLO 2 Advanced software
- HP Insight Rapid Deployment software
- HP Insight Power Manager software
- HP Insight Performance Manager module
- HP Insight Vulnerability and Patch Manager module
- HP Insight Virtual Machine Manager software for ProLiant

Additional Insight Software standalone products and management tools included on the Insight Software media kit can be installed manually:

- HP Insight Server Migration software for ProLiant
NOTE: HP Insight Server Migration software for ProLiant is licensed separately from Insight Control suite.
- HP Insight Remote Support Standard
- HP Insight Remote Support Advanced (previously Service Essentials Remote Support Pack)

NOTE: HP Insight Server Migration software for ProLiant can be installed from the SMP CD included in the Insight Software media kit.

NOTE: For additional product and licensing information about HP Insight Control suite, visit: <http://www.hp.com/go/ice>.

NOTE: As of Feb. 1, 2009, HP iLO Power Management Pack is no longer being sold. Customer can either purchase HP Insight Control suite which contains all the components of IPMP or the standalone components which include iLO Advanced, Insight Power Manager software and System Insight Manager.

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

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

Standard Features

HP ProLiant Onboard Administrator

HP ProLiant Onboard Administrator (powered by the Integrated Lights-Out 2 management processor) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP ProLiant Onboard Administrator functions without additional software, and can be accessed from any location via a web browser. It works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics - VSE suite for ProLiant helping customers unlock the value of the ProLiant platform and deliver the highest possible quality of IT service to the business.

Capabilities of the HP ProLiant Onboard Administrator embedded in ProLiant ML/DL servers include, but are not limited to the following:

- Rom-based Setup Utility (RBSU) and Option Rom Configuration for Arrays (ORCA)
- IML and iLO event logging
- Automatic Server Recovery (ASR)
- OS independent hardware health status
- Present server power consumption
- Virtual Unit ID control
- Remote serial console
- Virtual power button control
- Dynamic Sector Repairing (with Smart Array controller)
- Drive Parameter Tracking (with Smart Array controller)
- Hot Spare Boot

NOTE: Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and attempt to use the remaining good processor.

Unlock the full remote administration capabilities of HP ProLiant Onboard Administrator with Integrated Lights-Out 2 Advanced.

Server Management Stand Alone Software Product - ProLiant Essentials

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) provides a unified, secure and extensible standards-based environment to centrally manage servers, storage and other infrastructure devices, (both HP and non-HP) across multiple operating system platforms.

HP Insight Rapid Deployment software

For additional information, please see: www.hp.com/go/insight

HP Insight Rapid Deployment Software (RDP) extends HP Systems Insight Manager with a complete deployment solution for HP ProLiant servers. RDP provides a central location to configure server hardware, deploy Windows, Linux and VMware ESX operating environments and install HP ProLiant Support Pack drivers using images and scripted profiles. For more information, visit: <http://www.hp.com/go/rdp>.

HP Server Migration Pack - Universal Edition

Upgrading, replacing, or virtualizing your existing server? Effortlessly transition to new virtual or physical HP ProLiant servers or BladeSystem with automated, accurate and affordable migration of OS, application and data. SMP Universal automates the manual processes required for migrating servers between physical or virtual platforms, whether migrating to VMware or Microsoft virtual machines. SMP Universal allows all of the following migrations:

- physical to ProLiant
- physical to virtual
- virtual to virtual
- virtual to ProLiant

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

HP Insight Dynamics - VSE suite for ProLiant

The HP Insight Dynamics - VSE suite for ProLiant is advanced infrastructure management software that allows you to analyze and optimize your adaptive infrastructure to manage physical and virtual

Standard Features

resources in the same way. HP Insight Dynamics - VSE gives you a powerful toolkit to accelerate complex technology projects and simplify daily operations. It enables you to plan capacity and power continuously, balance across physical and virtual resources, ensure cost-effective high availability and provision infrastructure consistently.

HP Insight Orchestration, an optional extension to Insight Dynamics - VSE, 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. HP Insight Recovery, also an optional extension for Insight Dynamics - VSE, enables cost-effective disaster recovery for physical and virtual environments. Application environments can 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>,

<http://www.hp.com/go/insightorchestration>,

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

HP Integrated Lights-Out (iLO) 2 Advanced Pack Unlocks the full capabilities of the ProLiant Onboard Administrator with comprehensive remote control including Virtual KVM remote graphical console, power management capabilities such as power measurement, regulation, and capping, new iLO Text Console, automatic and on-demand video recording of server events, global team collaboration for up to four remote users, virtual media (floppy, CD/DVD, USB key), virtual folders, and enterprise security (directory services and two-factor authentication). For additional information, please see:

www.hp.com/go/iLO

HP Insight Power Manager (IPM) Upgrades the single-server remote management capabilities of iLO Select/Advanced to include centralized reporting and policy-based management of power consumption and thermal output provided by the Insight Power Manager. IPM unifies all of this functionality within a single user interface - HP Systems Insight Manager. For additional information, please see: www.hp.com/go/ipm

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

Core Infrastructure Management

HP Foundation Pack 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
- HP ProLiant Firmware Maintenance

SmartStart version supported (minimum): SmartStart 8.20

<http://www.hp.com/servers/smartstart>

NOTE: In an effort to support reducing our environmental impact, the



Standard Features

Insight Management Providers (WBEM)

HP ProLiant Essentials Foundation Pack 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.

The HP Insight Management WBEM Providers leverage the rich set of base-level instrumentation provided by the system management controllers and drivers, I/O controllers and drivers, and system firmware interfaces delivering in-depth hardware management, including hardware inventory data, system state, and event notifications.

Key Benefits Include:

- Heightened Security
 - Single integrated Security Model
 - Built using industry standard secure protocols and encryption algorithms (SSL, SSH)
 - Reduce the number of entry points into internal network
- Reduced complexity of setup and configuration
- Delivers standards-based management across vendor platforms
- Robust in-depth and usable data that is provided to the HP System Management Homepage and Central Management Console
- Guaranteed event delivery
- Reduces overall load on the server by smaller agent footprint and maintenance burden
- Provides in-depth hardware management, inventory data, system state, and event notifications

The Insight Management Providers are included on ProLiant Support Packs.

For additional information about the Management Providers please visit <http://www.hp.com/go/HPwbem>

Insight Management Agents (SNMP)

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

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

For additional information about the Management Agents and the HP System Management Homepage please visit the management Web site at: <http://www.hp.com/servers/manage>.

Subscriber's Choice

Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at:

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

and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.

Standard Features

ProLiant Support Packs and ROMPaq, software The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through ProLiant Support Packs the HP Insight Rapid Deployment Software, SmartStart or downloaded from software and drivers download pages website at: <http://www.hp.com/go/support>.

HP Serviceguard for Linux (SGLX)

HP Serviceguard for Linux provides high availability clustering for Linux applications running on HP Integrity, HP ProLiant and other supported industry-standard servers. Serviceguard for Linux reduces planned and unplanned downtime and delivers efficient, continuous access to business-critical applications - with all of the enterprise features you expect from HP.

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

For the most recent list of Linux distributions & kernels, servers and storage supported with Serviceguard for Linux, please see:

ftp://ftp.compaq.com/pub/products/servers/ha/linux/SGLX_Certification_Matrix.pdf

The following is a quick summary of HP Serviceguard for Linux features and support:

- Supported Virtual Machines
 - SG/LX in HP Integrity Virtual Machines guests
 - SG/LX in VMware ESX guests
 - SG/LX in Red Hat and SUSE Xen hosts (DOM0)
- Application Integration Toolkits
 - HP Serviceguard for Linux Oracle Database Toolkit
 - HP Serviceguard Extension for SAP on Linux (SGeSAP/LX)
 - Free Application Integration Toolkits:
 - Apache
 - MySQL
 - NFS
 - PostgreSQL
 - Samba
 - Tomcat
 - Sendmail
- Disaster Tolerant Solutions
 - HP Serviceguard for Linux Extended Distance Cluster (XDC) extends cluster distances up to 100 km, utilizes software RAID mirroring for data replication and is storage array independent
 - HP StorageWorks XP/EVA Cluster Extension Software for Linux (CLX) works seamlessly with HP Serviceguard for Linux, HP StorageWorks Continuous Access, and HP Disk Arrays to automate failover and failback between sites
- Software updates are distributed by HP Services to customers with support contracts

NOTE: For additional information including software and server support on HP Serviceguard for Linux, visit: <http://www.hp.com/go/sglx> or see the HP Serviceguard for Linux QuickSpecs.

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

Standard Features

Industry Standard Compliance	ACPI V2.0 Compliant PCI-Express Gen2 PXE Support WOL Support Microsoft® Logo certifications USB 2.0 SMBIOS 2.6.1
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Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Parallel and serial interface control Administrator's password
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Security Trusted Platform Module	<p>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.</p>
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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.

Server Power Cords	<p>High voltage power cord ships standard with all part numbers. Localized cables included with geographic specific models in other world regions.</p> <p>NOTE: ProLiant DL servers no longer ship standard with NEMA power cords (187335-001) 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 now ship standard with only a PDU power cord (416151-B21). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the above NEMA power cord must be ordered separately.</p>
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UPS Power Cord Matrix	<p>Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: http://h18004.www1.hp.com/products/servers/proliantstorage/power-protection/index.html</p>
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Standard Features

Power Supply

HP has a new design for ProLiant power- the new Common Slot Power Supply bay. This design provides the customer with commonality in power supplies across multiple platforms to save on the cost of spares and allows HP to offer multiple power solutions to fit the customers' needs. Many HP ProLiant Servers come with Common Slot, High Efficiency and Right-Size Power Supplies. The new HP Common Slot power supplies are designed for the highest power efficiency without degrading performance of the ProLiant server. Power Supplies have efficiency ratings up to 92%. There are three Right Size power options available depending on the configuration of your server. To make sure you select the correct power supply to meet your configuration, please use the HP Power Advisor at www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

Common Slot ProLiant It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP offers three Power Supply Options:

- 460Watts, Common Slot, 92% Efficiency
- 750Watts, Common Slot, 92% Efficiency
- 1200Watts, Common Slot, 90% Efficiency

The HP ProLiant Common Slot Power supplies meet multiple Energy Efficiency Initiatives: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD for the 460w and 750w Power Supplies and Climate Savers Computing Initiative Silver, ECOS Consulting 80PLUS Silver for 1200w Power Supply. HP has also been working with the EPA on developing an ENERGY STAR Computer Server specification and plans on offering models that meet the requirements when they are published. Please visit the ENERGY STAR website at www.energystar.gov for updates on the specification development process and approved platforms.

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) Hot Plug fans ship standard (for full redundancy you can purchase the HP ML and DL 370G6 Redundant Fan Kit; PN: 508107-B231)

Required Cabling

For external storage cabling information, refer to the Web site at: www.hp.com/servers/dl370 or www.hp.com/servers/ml370.

Operating Systems and [Microsoft Windows Server](#)

Virtualization Software [Microsoft Windows Server Hyper V](#)

Support for ProLiant [Red Hat Enterprise Linux \(RHEL\)](#)

Servers [SUSE Linux Enterprise Server \(SLES\)](#)

[Oracle Enterprise Linux 5 \(OEL\)](#)

[Solaris 10 for x86/x64 based Systems](#)

[VMware](#)

[Citrix Essentials for 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, please visit our Support Matrix at: <http://www.hp.com/go/ossupport> and our driver download page <http://www.hp.com/support/ML370G6>.

Standard Features

Rack Airflow Requirements

Rack 10000 series Cabinets

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

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

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

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

NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: www.hp.com/servers/dl370 or www.hp.com/servers/ml370.

Telco Rack Support

ProLiant rack mount servers and tower-to-rack kits include snap-on quick deploy side rails designed to accommodate both round and square hole rack rails. Telco rack solutions for ProLiant servers are available through the following URL: <http://www.racksolutions.com/hp>.

Factory Express Portfolio for Servers and Storage

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

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

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

HP Enterprise Configurator

The HP 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>

Standard Features

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

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

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

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

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

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

- **Support** - 3-Year Support Plus 24 only

Refer to the information on "Installation & Start-Up" for service on ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet; to be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

NOTE: For a complete listing of service offerings and information visit:

<http://www.hp.com/services/proliantservices>

<http://www.hp.com/go/proliant/carepack>

Models

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

Tower Models

HP ML370 G6 Base Model	Processor(s)	(1) Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
ML370 E5540 6GB 487791-xx1	Cache Memory	8MB (1 x 8MB) Level 3 cache
	Memory	6 GB (3 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	PCI-Express Slots	10 slots - (9) available PCI-e Gen2 slots (NOTE: 10 slots available, one is taken by the NIC riser card)
	Power Supply	(1) 750W Hot Plug Power Supply
	Fans	(3) Hot Plug Fans
	Form Factor	4U Tower

HP ML370 G6 Entry Model	Processor(s)	(1) Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
ML370 E5520 4GB 487795-xx1	Cache Memory	8MB (1 x 8MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs
	Network Controller	HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)
	Optical Drive	SATA DVD ROM
	PCI-Express Slots	10 slots - (9) available PCI-e Gen2 slots (NOTE: 10 slots available, one is taken by the NIC riser card)
	Power Supply	(1) 460W Hot Plug Power Supply
	Fans	(3) Hot Plug Fans
	Form Factor	4U Tower

Models

Rack Models

<p>HP DL370 G6 Base Model</p> <p>DL370 E5530 6GB 487794-xx1</p>	<p>Processor(s)</p> <p>Cache Memory</p> <p>Memory</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drive</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>PCI-Express Slots</p> <p>Power Supply</p> <p>Fans</p> <p>Form Factor</p>	<p>(1) Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)</p> <p>8MB (1 x 8MB) Level 3 cache</p> <p>6 GB (3 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter</p> <p>HP Smart Array P410i/256MB Controller</p> <p>None ship standard</p> <p>(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)</p> <p>SATA DVD ROM</p> <p>10 slots - (9) available PCI-e Gen2 slots (NOTE: 10 slots available, one is taken by the NIC riser card)</p> <p>(1) 750W Redundant Hot Plug Power Supply</p> <p>(3) Hot Plug Fans</p> <p>4U Rack</p>
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<p>HP DL370 G6 Performance Model</p> <p>DL370 E5550 12GB 487790-xx1</p>	<p>Processor(s)</p> <p>Cache Memory</p> <p>Memory</p> <p>Network Controller</p> <p>Storage Controller</p> <p>Hard Drive</p> <p>Internal Storage</p> <p>Optical Drive</p> <p>PCI-Express Slots</p> <p>Power Supply</p> <p>Fans</p> <p>Form Factor</p>	<p>(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)</p> <p>8MB (1 x 8MB) Level 3 cache</p> <p>12 GB (6 x 2 GB) PC3-10600 (DDR3-1333) Registered DIMMs</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter</p> <p>HP Smart Array P410i/512MB with BBWC</p> <p>None ship standard</p> <p>(8) SFF SAS/SATA HD Bays (Standard); Up to (24) SFF SAS/SATA with optional drive cage (up to three 8 SFF drive cage can be installed)</p> <p>SATA DVD ROM</p> <p>10 slots - (9) available PCI-e Gen2 slots (NOTE: 10 slots available, one is taken by the NIC riser card)</p> <p>(2) 750W Redundant Hot Plug Power Supplies</p> <p>(5) Fully Redundant Hot Plug Fans</p> <p>4U Rack</p>
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Country Code Key

XX=00
XX=01
XX=03
XX=04
XX=05
XX=20
XX=29
XX=37
XX=42
XX=AA

Tower Code Key

U.S. English
Australia
UK
Germany
France
Brazil
Japan
APD
Europe
PRC

Rack Code Key

U.S. English
N/A
N/A
N/A
N/A
Brazil
Japan
APD
Europe
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 CTO product offerings and requirements.

NOTE: HP does not allow factory integration of options into standard models listed above. Configure-to-order servers must start with a CTO Chassis.

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

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

Models	<p>HP ProLiant ML370 G6 Tower Models</p> <p>HP ProLiant ML370 G6 SFF CTO Chassis 483880-B21</p> <p>NOTE: Supports Small Form Factor (SFF) - 2.5" Drives</p> <p>Factory Integrated Model ships with:</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Integrated Lights-Out embedded HP Smart Array P410i/Zero Memory Controller (8) Hot-Plug (SFF) SAS/SATA Drive Bays (9) available PCI-e Gen2 slots (5) USB ports (3) Hot Plug Fans Tower Form Factor</p>
	<p>HP ProLiant ML370 G6 Tower CTO Chassis</p> <p>HP ProLiant ML370 G6 LFF CTO Chassis 483879-B21</p> <p>NOTE: Supports Large Form Factor (LFF) - 3.5" Drives</p> <p>Factory Integrated Model ships with:</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Integrated Lights-Out embedded HP Smart Array P410i/Zero Memory Controller (6) Hot-Plug (LFF) SAS/SATA Drive Bays (9) available PCI-e Gen2 slots (5) USB ports (3) Hot Plug Fans Tower Form Factor</p>
	<p>HP ProLiant DL370 G6 Rack Models</p> <p>HP ProLiant DL370 G6 SFF CTO Chassis 483874-B21</p> <p>NOTE: Supports Small Form Factor (SFF) - 2.5" Drives</p> <p>Factory Integrated Model ships with:</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Integrated Lights-Out embedded HP Smart Array P410i/Zero Memory Controller (8) Hot-Plug (SFF) SAS/SATA Drive Bays (9) available PCI-e Gen2 slots (5) USB ports (3) Hot Plug Fans 4U Rack Form Factor</p>
	<p>HP ProLiant DL370 G6 LFF CTO Chassis 483873-B21</p> <p>NOTE: Supports Large Form Factor (LFF) - 3.5" Drives</p> <p>Factory Integrated Model ships with:</p> <p>HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter Integrated Lights-Out embedded HP Smart Array P410i/Zero Memory Controller (6) Hot-Plug (LFF) SAS/SATA Drive Bays (9) available PCI-e Gen2 slots (5) USB ports</p>

Configuration Information - Factory Integrated Models

(3) Hot Plug Fans
4U Rack Form Factor

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

Processors

NOTE: If High Performance Model features are desired, 2nd processor is included in the Performance Pack part numbers in Step 3 below.

Quad-Core Processors

Intel® Xeon® Processor W5580 (3.20 GHz, 8MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/2)	495928-L21
Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO	495930-L21
Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO	495932-L21
Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3), FIO	495934-L21
Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	495936-L21
Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	495938-L21
Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	495940-L21
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	495942-L21
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	495944-L21
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2), FIO	505511-L21

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800), FIO	495946-L21
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Base Memory

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-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

Power Supply

NOTE: Refer to HP Power Advisor when selecting a power supply for your configuration, www.hp.co/go/hppoweradvisor. Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. Prior to making a power

Configuration Information - Factory Integrated Models

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/proliant-energy-efficient" or www.hp.com/go/hppoweradvisor

HP 460W CS HE Power Supply Kit	503296-B21
HP 750W CS HE Power Supply Kit	512327-B21
HP 1200W CS HE Power Supply Kit	500172-B21

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

Step 3: Choose Additional Factory Integratable Options

Controllers

NOTE: If Additional Memory Cache Module or Controller is Required please pick one of the following:

HP 256 MB P-series cache module FIO	534108-B21
NOTE: Available for P410i only.	
512MB BBWC	462967-B21
HP Smart Array P212/256 MB w/ Battery FIO	491191-B21
HP Smart Array P410/256 MB w/ Battery FIO	491195-B21
HP Smart Array P411/256 MB w/ Battery FIO	491193-B21

Performance Packs

Performance Packs are necessary to configure a HP ProLiant DL370 G6 or a HP ProLiant ML370 G6 to a High Performance Model which includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value. The Performance Pack includes a 2nd processor, redundant fans, power supply, and memory expansion board.

NOTE: Must also select 447326-B21 to achieve parity to DL370 G6 or ML370 G6 High Performance Models.

HP DL370 G6 and ML370 G6 X5550 HPM FIO Perf Kit	516727-B21
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Step 4: Choose Additional Options for Factory Integration

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

Core Options

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

HP ProLiant ML370 and DL370 G6 Unique Options	(8) Small Form Factor (SFF) 2nd Drive Cage Kit	507803-B21
	(6) Large Form Factor (LFF) Backplane Kit	507810-B21
	(2) Large Form Factor (LFF) Drive Cage Kit	487936-B21
	HP ML370 G6 Tower to Rack Conversion Kit	515031-B21
	HP ML and DL 370 G6 Redundant Fan Kit	508107-B21
	HP ML and DL 370 G6 Graphic Card Adapter Kit	537721-B21
	HP ML and DL 370 G6 Smart-mini DIMM Module	519808-B21

NOTE: By plugging the Smart-mini DIMM Module to the NIC, TOE will be enabled.

Processors

Quad-Core Processors

Intel® Xeon® Processor W5580 (3.20 GHz, 8MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/2)	495928-B21
Intel® Xeon® Processor X5570 (2.93 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	495930-B21
Intel® Xeon® Processor X5560 (2.80 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	495932-B21
Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/3/3)	495934-B21
Intel® Xeon® Processor E5540 (2.53 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	495936-B21
Intel® Xeon® Processor E5530 (2.40 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	495938-B21
Intel® Xeon® Processor E5520 (2.26 GHz, 8MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	495940-B21
Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)	495942-B21
Intel® Xeon® Processor E5504 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	495944-B21
Intel® Xeon® Processor L5520 (2.26 GHz, 8MB L3 Cache, 60W, DDR3-1066, HT, Turbo 1/1/2/2)	505511-B21

Dual-Core Processors

Intel® Xeon® Processor E5502 (1.86 GHz, 4MB L3 Cache, 80W, DDR3-800)	495946-B21
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Core Options

Memory

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-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

Optical Drives

HP Half-Height SATA DVD-ROM Optical Drive	447326-B21
HP Half-Height SATA DVD RW Optical Drive	447328-B21
HP Slim SATA DVD RW Optical Drive	481043-B21
HP Slim SATA DVD-ROM Optical Drive	481041-B21

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.

SAS Hot Plug SFF Enterprise (ENT) Drives

NOTE: Please note that SFF 2.5" (small form factor) drives can only be installed on tower or rack models with SFF chassis (models).

HP 300GB 6G SAS 10K SFF DP ENT HDD	507127-B21
HP 300GB 3G SAS 10K SFF DP ENT HDD	492620-B21
HP 146GB 6G SAS 15K SFF DP ENT HDD	512547-B21
HP 146GB 6G SAS 10K SFF DP ENT HDD	507125-B21
HP 146GB 3G SAS 10K SFF DP ENT HDD	418367-B21
HP 146GB 3G SAS 15K SFF DP ENT HDD	504062-B21
HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21
HP 72GB 3G SAS 15K SFF DP ENT HDD	418371-B21
HP 72GB 3G SAS 10K SFF DP ENT HDD	384842-B21
HP 36GB 3G SAS 15K SFF DP ENT HDD	418369-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)

SAS Hot Plug 3.5" Enterprise (ENT) Drives

HP 450GB 3G SAS 15K 3.5" DP ENT HDD	454232-B21
HP 400GB 3G SAS 10K 3.5" DP ENT HDD	459508-B21
HP 146GB 3G SAS 15K 3.5" DP ENT HDD	384854-B21
HP 72GB 3G SAS 15K 3.5" DP ENT HDD	384852-B21

SAS Hot Plug 3.5" Midline (MDL) Drives

NOTE: Please note that LFF 3.5" (large form factor) drives can only be installed on tower or rack models with LFF chassis (models).

Core Options

HP 1TB 3G SAS 7.2K DP MDL HDD	461137-B21
HP 750GB 3G SAS 7.2K DP MDL HDD	461135-B21

SATA Hot Plug SFF Entry (ETY) Drives

NOTE: Please note that SFF 2.5" (small form factor) drives can only be installed on tower or rack models with SFF chassis (models).

HP 250GB 3G SATA 5.4K SFF ETY HDD	460355-B21
HP 120GB 1.5G SATA 5.4K SFF ETY HDD	458924-B21

SATA Hot Plug 3.5" Midline (MDL) Drives

HP 1TB 3G SATA 7.2K 3.5" MDL HDD	454146-B21
HP 750GB 3G SATA 7.2K 3.5" MDL HDD	458930-B21
HP 500GB 3G SATA 7.2K 3.5" MDL HDD	458928-B21
HP 250GB 3G SATA 7.2K 3.5" MDL HDD	458926-B21

NOTE: SATA hard 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)

Communications

HP NC112T PCIe Gigabit Server Adapter	503746-B21
HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21

NOTE: There is a maximum of five NC364T PCI Express Quad Port Gigabit Server Adapters allowed in this server.

HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21

NOTE: A minimum of two gigabytes (2 GB) of server memory is required per each NC522SFP adapter.

HP NC524SFP Dual Port 10GbE Module	489892-B21
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NOTE: A minimum of two gigabytes (2 GB) of server memory is required per each NC524SFP adapter.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.

Smart-mini DIMM Module

HP ML and DL 370 G6 Smart-mini DIMM Module	519808-B21
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NOTE: By plugging the Smart-mini DIMM Module to the NIC, TOE will be enabled.

Core Options

Redundant Options

CAUTION: Many HP ProLiant Servers now offer new power options, including Common Slot Power Supplies. These power supplies come in multiple power ratings and higher efficiency levels to offer the Right Size solution to fit your configuration. This provides improved power delivery and the advantage of reclaiming lost power. 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/proliant-energy-efficient or www.hp.com/go/hppoweradvisor. In ProLiant Servers that have more than one power slot (bay), only same size power supplies are recommended. If non-matched power supplies are inserted you will get errors and operation will fail.

HP 460W CS HE Power Supply Kit 503296-B21

HP 750W CS HE Power Supply Kit 512327-B21

HP 1200W CS HE Power Supply Kit 500172-B21

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

HP ML and DL 370G6 Redundant Fan Kit 508107-B21

Additional Options

HP Insight Control Suite

NOTE: Electronic licensing options are available for Insight Control suites software products. Please see the appropriate Insight Control QuickSpecs for additional information. www.hp.com/go/ice

HP Insight Control suite

HP Insight Control suite, No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452148-B22

NOTE: Contains 1 license for each of RDP, PMP, VMM, VPM, IPM and iLO Advanced. Includes one year of 24 x 7 HP Software Technical Support and Update Service

NOTE: This part number can be purchased as a single license or as multiple licenses with a single activation key. Customer will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. Only available directly from HP and select resellers in the Americas region.

NOTE: For additional license kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

HP Insight Software Media Kit

436222-B21

NOTE: Insight Software DVD media without licenses. Contains Insight Manager and Insight Software products and components licensed by Insight Control suite. Uses an integrated installer to perform quick and accurate software installation and updates.

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

HP Insight Control Linux Edition

HP Insight Control Environment for Linux, Media pack (DVD) - No licenses included 464422-B22

NOTE: This optional Media pack DVD contains the ISO image for HP Insight Control Environment for Linux, HP System Insight Manager, HP Insight Power Manager, HP Virtual Machine Management Pack, and an integrated installer. Servers must be acquired separately.

NOTE: This Media pack is optional because the latest ISO image and latest updates may be downloaded at no cost from: <http://www.hp.com/go/ice-linux> (click on Download button).

HP Insight Control Environment for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates 464423-B22

NOTE: This part number can be used to purchase one (1) license with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: One certificate is shipped for each license.

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

Server Management Stand Alone Software

NOTE: Electronic licensing options are available for select software products. Please see the appropriate Insight Software standalone product QuickSpecs for additional information.

Deploy

HP Insight Rapid Deployment software

HP Insight Rapid Deployment software No Media 1-Server License including 1 year of 24x7 Technical Support and Updates 452151-B21

NOTE: This license allows 1 server to be deployed and managed via RDP.



Additional Options

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: For additional License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11053_div/11053_div.html

HP Insight Server Migration software for ProLiant

HP Insight Server Migration software for ProLiant, No Media, Physical / Virtual to ProLiant Single Migration License, including 1 year of 24x7 Technical Support and Updates 460750-B21

NOTE: This license allows 1 physical to ProLiant or virtual to ProLiant migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Server Migration software for ProLiant, No Media, Physical / Virtual to Virtual Single Migration License, including 1 year of 24x7 Technical Support and Updates 460753-B21

NOTE: This license allows 1 physical to virtual or virtual to virtual migration. Customer will receive a printed license entitlement certificate and documentation via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Insight Server Migration software for ProLiant, No Media, 1-Year Unlimited Migration License, including 1 year of 24x7 Technical Support 460756-B21

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

NOTE: For additional License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12855_div/12855_div.html

Monitor

HP Insight Dynamics-VSE suite for ProLiant

HP Insight Dynamics-VSE with Insight Control suite, 1-server license including 1 year of 24x7 Technical Support and Updates 483527-B21

NOTE: This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive a printed license entitlement certificate via physical shipment.

HP Insight Dynamics-VSE without Insight Control suite, 1-server license including 1 year of 24x7 Technical Support and Updates 483531-B21

NOTE: This license supports HP ProLiant ML/DL and c-Class Blade servers. Customer will receive a printed license entitlement certificate via physical shipment.

NOTE: For additional License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/13050_div/13050_div.html

Control

HP Integrated Lights-Out 2 Advanced software

HP Integrated Lights-Out 2 Advanced software, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 512485-B21

NOTE: For additional License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html

Optimize

Additional Options

HP Insight Power Manager (IPM)

HP Insight Power Manager software, No Media, 1-Server License, including 1 year of 24x7 Technical Support and Updates 452677-B21

NOTE: Customers purchasing this upgrade must already have an iLO Advanced or Select license on each managed server. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.

NOTE: For additional License Kits, please see the QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/12623_div/12623_div.html

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

Drive Cage Options	(8) Small Form Factor (SFF) 2nd Drive Cage Kit	507803-B21
	(6) Large Form Factor (LFF) Backplane Kit	507810-B21
	(2) Large Form Factor (LFF) Drive Cage Kit	487936-B21

Graphic Card Options	HP ML and DL 370 G6 Graphic Card Adapter Kit	537721-B21
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Secure Digital (SD) Memory Cards	HP Photosmart 2GB Secure Digital (SD) Card	L1877A
	HP Photosmart 4GB Secure Digital High Speed Card (SDHC)	L1878A#707

Security	HP Trusted Platform Module Option Kit	488069-B21
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Storage Controllers	SAS Controllers	
	Smart Array P800 Controller	
	HP Smart Array P800/512 BBWC Controller	381513-B21
	Smart Array P212 Controller	
	HP Smart Array P212/Zero Memory Controller	462828-B21
	HP Smart Array P212/256 MB Controller	462834-B21
	256 MB Cache	462968-B21
	Smart Array P410 Controller	
	HP Smart Array P410/256 MB Controller	462862-B21
	HP Smart Array P410/512 MB with BBWC Controller	462864-B21
	512MB BBWC	462967-B21
	NOTE: When used with the embedded HP Smart Array P410i controller, this module also requires a 24 inch SFP Battery Cable (496029-B21)	
	Smart Array P411 Controller	
	HP Smart Array P411/256 MB Controller	462830-B21
	HP Smart Array P411/512 MB with BBWC Controller	462832-B21
512MB BBWC	462967-B21	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12616_div/12616_div.html (Smart Array P800 Controller)		

Additional Options

http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html

(Smart Array P212 Controller)

http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html

(Smart Array P410 Controller)

http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html

(Smart Array P411 Controller)

SAS Controller Options

HP SAS Expander Card

468406-B21

NOTE: For use with the additional 8 SFF drive cage (507803-B21).

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

http://h18004.www1.hp.com/products/quickspecs/13232_div/13232_div.html

(SAS Expander Card)

SAS HBA

HP SC08Ge Host Bus Adapter

488765-B21

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

http://h18004.www1.hp.com/products/quickspecs/13082_div/13082_div.html

(SC08Ge HBA)

Power Cords

NOTE: HP ProLiant servers ships with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs).

Nema 5-15P to IEC320-C13, North America low voltage (6 ft/2 m)

AF556A

Power Cord, Euro, 10A 250 V Straight (6 ft/1.83 m)

AF568A

Power Cord, UK, 10A 250 V Straight (6 ft/1.83 m)

AF570A

Power Cord, Danish, 10A 250 V Straight (6 ft/1.83 m)

AF566A

Power Cord, Swiss, 10A 250 V Straight (6 ft/1.83 m)

AF565A

Power Cord, Italian, 10A 250 V Straight (6 ft/1.83 m)

AF571A

Power Cord, South Africa, 10A 250 V Straight (8.2 ft/2.5 m)

AF567A

Tape Drives

NOTE: For the complete listing of Tape Drive offerings, please see:

<http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html>

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

USB Tape Drives

HP StorageWorks DAT 160 USB Internal Tape Drive

Q1580A

SAS Tape Drives

NOTE: For the ML370 G6, HP recommends purchasing the HP Smart Array P212 Controller (462828-B21) for a dedicated SAS HBA for tape.

HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive

DW085A

HP StorageWorks LTO-3 Ultrium 920 SAS Internal Tape Drive

EH847A

HP StorageWorks LTO-4 Ultrium 1760 SAS Internal Tape Drive

EH919A

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

Additional Options

Disk-Based Backup	<p>RDX Removable Disk Backup</p> <p>HP StorageWorks RDX500 Internal Removable Disk Backup System AJ934A NOTE: 500GB of Disk Storage.</p> <p>D2D Backup</p> <p>HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit EH924A NOTE: 2TB of Disk Storage</p> <p>HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive EH952A NOTE: 3TB of Disk Storage.</p> <p>HP StorageWorks D2D2503i Backup System EH945A NOTE: 3TB of Disk Storage.</p> <p>HP StorageWorks D2D4004i Backup System EH938A NOTE: 4.5TB of Disk Storage.</p> <p>NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://www.hp.com/go/d2d</p>
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Tape Autoloaders	<p>HP StorageWorks 1/8 G2 Tape Autoloader</p> <p>HP StorageWorks 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader AK377A HP StorageWorks 1/8 G2 LTO-3 Ultrium 920 SAS Autoloader AH558A HP StorageWorks 1/8 G2 Tape Autoloader Rack Kit AH166A NOTE: Required to install the 1/8 G2 Autoloaders in a standard 19-inch rack; includes rails and rackmount instructions.</p> <p>NOTE: Please reference the Tape Autoloader QuickSpecs at: http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs</p>
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Tape Libraries	<p>HP StorageWorks MSL2024 Tape Library</p> <p>HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Drive Library AK378A HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Drive Library AH559A</p> <p>HP StorageWorks MSL4048 Tape Library</p> <p>HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Drive Library AK380A HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SAS Drive Library AH560A NOTE: Please reference the MSL Tape Library QuickSpecs at: http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at: http://www.hp.com/go/ebs.</p>
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Additional Options

High Availability Cluster Options

HP Serviceguard for Linux

HP Serviceguard for Linux on HP ProLiant and other third-party x86 Servers - Physical Media Kit 519353-B21

NOTE: This kit contains media only.

HP Serviceguard for Linux on HP ProLiant and other third-party x86 Servers Single-Server License 519354-B21

Licensed per Server

NOTE: This license allows Serviceguard for Linux to be installed on 1 server. Customer will receive a printed license entitlement certificate via physical shipment.

The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s).

Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Serviceguard for Linux - Flexible-Quantity License (for HP ProLiant and other third-party x86 servers) 519355-B21

Licensed per Server

NOTE: This part number can be used to purchase multiple licenses with a single activation key. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via

fax in order to obtain the license activation key(s).

Includes one year of 24 x 7 HP Software Technical Support and Update Service.

HP Serviceguard Linux Oracle Database Toolkit for HP ProLiant/x86 Servers Licensed per cluster 463833-B21

Includes media and One Year 24x7 Software Support & Updates

HP Serviceguard Extension for SAP on Linux for HP ProLiant/x86 Servers Licensed per physical server 463834-B21

Includes media and One Year 24x7 Software Support & Updates

HP Serviceguard Linux Extended Distance Cluster (XDC) for HP ProLiant/x86 Servers Licensed per physical server 463835-B21

Licensed per physical server

Includes media and One Year 24x7 Software Support & Updates

NOTE: The above is not a complete list of all HP Serviceguard for Linux product numbers. For a detailed list of supported configuration/certification options for HP Serviceguard for Linux, please refer to the HP Serviceguard for Linux Configuration & Ordering Guide available at: <http://www.hp.com/go/sglx/info>.

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

NOTE: For additional information including a complete list of Product Numbers for HP Serviceguard for Linux, please see the following QuickSpecs at:

http://h18000.www1.hp.com/products/quickspecs/11518_div/11518_div.html (Worldwide)

Additional Options

StorageWorks Options **StorageWorks Fibre Channel HBA**

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: <http://h18006.www1.hp.com/storage/saninfrastructure/hba.html>

HP StorageWorks FC2142SR 4Gb PCI-e FC HBA	A8002A
HP StorageWorks FC2242SR Dual Channel 4Gb PCI-e FC HBA	A8003A
HP StorageWorks FC1142SR 4Gb PCI-e FC HBA	AE311A
HP StorageWorks FC1242SR Dual Channel 4Gb PCI-e FC HBA	AE312A
HP StorageWorks 81Q PCI-e FC HBA	AK344A
HP StorageWorks 81E 8Gb PCI-e FC HBA	AJ762A
HP StorageWorks 82E 8Gb Dual-port PCI-e FC HBA	AJ763A
HP StorageWorks 82Q 8Gb Dual Port PCI-e FC HBA	AJ764A

StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter	AH627A
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NOTE: Recommended Dual Channel Ultra320 SCSI Controller for connecting multi-drive MSL tape libraries to ProLiant servers.

HP StorageWorks 50 Modular Smart Array	HP StorageWorks 50 Modular Smart Array	364430-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12245_div/12245_div.html (Worldwide)	

HP StorageWorks 60 Modular Smart Array	HP StorageWorks 60 Modular Smart Array	418408-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12627_div/12627_div.html (Worldwide)	

HP StorageWorks 70 Modular Smart Array	HP StorageWorks 70 Modular Smart Array	418800-B21
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/12652_div/12652_div.html (Worldwide)	

Uninterruptible Power Systems - Tower **HP T1000v Uninterruptible Power System**

HP T1000v UPS	AF443A
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NOTE: The T1000v is available in China and India only.

NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13130_div/13130_div.html (Worldwide)

HP T1500 G3 UPS Models

HP T1500 G3 UPS, NA	AF450A
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HP T1500 G3 UPS, INTL	AF451A
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NOTE: Please see the QuickSpecs for additional information:

http://h18000.www1.hp.com/products/quickspecs/13160_div/13160_div.html (Worldwide)

Additional Options

Uninterruptible Power Systems - Rack	HP R1500 G2 UPS	
	HP, R1.5kVA UPS, 1U, NA	AF419A
	HP, R1.5kVA UPS, 1U, INTL	AF418A
	HP, R1.5kVA UPS, 1U, JPN/TW	AF421A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12507_div/12507_div.html (Worldwide)	
	HP R3000 UPS	
	HP R3000 VA UPS, 2U, DTC, INTL	AF414A
	HP R3000 VA UPS, 2U, Low Voltage L5-30, NA	AF422A
	HP R3000 VA UPS, 2U, High Voltage L6-20, NA	AF423A
	HP R3000 VA UPS, 2U, High Voltage L6-20, JPN	AF424A
HP R3000 VA UPS, 2U, Low Voltage L5-30, JPN	AF425A	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/10671_div/10671_div.html (Worldwide)		
HP R3000v Uninterruptible Power System		
HP R3000v UPS	AF444A	
NOTE: The R3000v is available in China and India only.		
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13129_div/13129_div.html (Worldwide)		
HP Rack-Mountable R5500 UPS		
HP R5500 VA UPS, INTL	AF416A	
HP R5500 VA UPS, NA/JPN	AF426A	
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)		
NOTE: For additional information on HP Uninterruptable Power Systems please go to: www.hp.com/servers/rackups .		

Additional Options

HP Monitored Power Distribution Unit (PDU)	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 17.3 kVA S2324 Monitored PDU- dual input, 3Ø, 24A (NA/JPN)	AF503A
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 16.6 kVA S2140 Monitored PDU- dual input, 1Ø, 40A (NA/JPN)	AF505A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 22.1 kVA S2316 Monitored PDU- dual input, 3Ø, 16A (INTL)	AF507A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 14.7 kVA S2132 Monitored PDU- dual input, 1Ø, 32A (INTL)	AF509A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A
		HP Monitored Power Distribution Unit: Half Rack Version
	HP 4.9 kVA S124 Monitored PDU- single input, 1Ø, 24A (NA/JPN)	AF914A
	HP 7.3 kVA S132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF915A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	

Modular PDUs 1U/0U (Up to 28 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	Fixed Cord Extension Bars	351655-B21
	NOTE: Two extension bar sticks; each with (7) C13 plugs.	
	3.6kVA Model - mPDU, 16A, High (WW)	252663-B24
	2.8 kVA Model - mPDU, 24A, Low (NA/JPN)	252663-D71
	4.9kVA Model - mPDU, 24A, High (NA/JPN)	252663-D72
	7.3kVA Model - mPDU, 32A, High (INT'L)	252663-B31
	8.3kVA Model - mPDU, 40A, High (WW)	252663-B21
	8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
	9.2kVA Model - mPDU, 40A, High (power cord attached) (INTL)	252663-B32
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu (Worldwide)	

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	HP USB 04 Standard Keyboard	DT528A#ABA

Rack Kit	HP ML370 G6 Tower to Rack Conversion Kit	515031-B21
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HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack Unassembled	358254-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12074_div/12074_div.html (Worldwide)	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .	

Additional Options

HP Rack 10000 G2 Series (Carbon/Graphite Metallic)	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A
	10642 G2 (42U) Rack Cabinet - Crated	AF003A
	10642 G2 (42U) Rack Cabinet, with Extension - Shock Pallet	AF004A
	10636 G2 (36U) Rack Cabinet - Pallet	AF011A
	10636 G2 (36U) Rack Cabinet - Shock Pallet	AF012A
	10636 G2 (36U) Rack Cabinet - Crated	AF013A
	10636 G2 (36U) Rack Cabinet, with Extension - Shock Pallet	AF014A
	10622 G2 (22U) Rack Cabinet - Pallet	AF021A
	10622 G2 (22U) Rack Cabinet - Shock Pallet	AF022A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Shock Pallet	AF034A
	10642 G2 (42U) Rack Cabinet 1200mm Deep - Pallet	AF038A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Pallet	AF041A
	10842 G2 (42U) 800mm Wide Rack Cabinet - Shock Pallet	AF042A
	10647 G2 (47U) Rack Cabinet - Pallet	AF031A
	HP Rack S10614 (14U) Rack Cabinet - Shock Pallet	292302-B22
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Shock Pallet	AF044A
	NOTE: Due to handling and shipping requirements, AF044A is only orderable through HP Factory Express. It is not for direct sales. Customer site surveys are required before an order is approved. CTO orders may require additional lead time.	
	10647 G2 (47U) Rack Cabinet 1200mm Deep - Pallet	AF045A
	NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.	
NOTE: xxxxxx-B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels).		
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:		
http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)		
NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower .		

Additional Options

Keyboards and Monitors

TFT7600 Rackmount Keyboard Monitor US	AG052A
TFT7600 Rackmount Keyboard Monitor UK	AG053A
TFT7600 Rackmount Keyboard Monitor GR	AG054A
TFT7600 Rackmount Keyboard Monitor FR	AG055A
TFT7600 Rackmount Keyboard Monitor IT	AG056A
TFT7600 Rackmount Keyboard Monitor SP	AG057A
TFT7600 Rackmount Keyboard Monitor DEN	AG058A
TFT7600 Rackmount Keyboard Monitor NOR	AG059A
TFT7600 Rackmount Keyboard Monitor SE/FI	AG060A
TFT7600 Rackmount Keyboard Monitor SWI	AG061A
TFT7600 Rackmount Keyboard Monitor PORT	AG062A
TFT7600 Rackmount Keyboard Monitor BEL	AG063A
TFT7600 Rackmount Keyboard Monitor JPN2	AG064A
TFT7600 Rackmount Keyboard Monitor RUS	AG065A
TFT7600 Rackmount Keyboard Monitor INTL	AG066A
1U Rackmount Keyboard with USB, US	AG072A
1U Rackmount Keyboard with USB, UK	AG073A
1U Rackmount Keyboard with USB, GR	AG074A
1U Rackmount Keyboard with USB, FR	AG075A
1U Rackmount Keyboard with USB, ITL	AG076A
1U Rackmount Keyboard with USB, SP	AG077A
1U Rackmount Keyboard with USB, DEN	AG078A
1U Rackmount Keyboard with USB, NOR	AG079A
1U Rackmount Keyboard with USB, SE/FI	AG080A
1U Rackmount Keyboard with USB, SWI	AG081A
1U Rackmount Keyboard with USB, PORT	AG082A
1U Rackmount Keyboard with USB, BEL	AG083A
1U Rackmount Keyboard with USB, JPN2	AG084A
1U Rackmount Keyboard with USB, RUS	AG085A
1U Rackmount Keyboard with USB, INTL	AG086A

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

Additional Options

HP KVM Switch Options	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A
	2x16 Server Console Switch with Virtual Media	AF600A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
	NOTE: Requires PS/2 and one USB port on server.	
	Server Console Switch (KVM), 0 x 2 x 8 port	AF616A
	Server Console Switch (KVM), 0 x 2 x 16 port	AF617A
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm .	
	HP 1x4 Console Switch (ALL)	AF611A
	PS2 Server Console Cable, 6 ft, 2 pack	AF612A
	USB Server Console Cable, 6 ft, 2 pack	AF613A

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

HP Serial Console Server Options	HP 16 Port Serial Console Server (worldwide)	AF101A
	HP 48 Port Serial Console Server (worldwide)	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm .	

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

Service and Support Offerings (HP Care Pack Services)	Hardware Services On-site Service	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4528E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4529E
	Hardware Services 6-Hour Call to Repair On-site Service	
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4530E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4538E
	Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U4539E
	Support Plus	
	Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4540E
	Support Plus 24	
Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4541E	



Additional Options

Onsite HW support 24x7, 4hr response and SuSE Linux SW Tech support
offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays,
Electronic U6311E

Onsite HW support 24x7, 4hr response and Red Hat ES Linux SW Tech support
offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays,
Electronic U8333E

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

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

HP ProLiant DL370 G6 Models

HP ProLiant ML370 G6 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
- No mixing DIMM voltage; all DIMMs must be the same voltage

DIMM Type ->	Registered Dimms (RDIMMs)				Unbuffered with ECC DIMMs (UDIMMs)		
	Dual Rank (2R)				Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)
DIMM Rank ->	Dual Rank (2R)				Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)
DIMM Capacity ->	2GB	4GB	8GB	8GB	4GB	1GB	2GB
DIMM Native Speed (MHz) ->	1333	1333	1066	1333	1066	1333	1333
SLOTS THAT CAN BE POPULATED							
18 slot servers	18	18	18	18	12	12	12
MAXIMUM CAPACITY (GB)							
18 slot servers	36	72	144	144	48	12	24
POPULATED DIMM SPEED (MHz)							
1 DIMM Per Channel	1333	1333	1066	1333	1066	1333	1333
2 DIMM Per Channel	1066	1066	1066	1333*	800	1066	1066
3 DIMM Per Channel	800	800	800	800	not supported	not supported	not supported

* Supported with ROM update via ROM Based Setup Utility (RBSU).

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



Memory

- 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
- 95 Watt CPU's are required for 1333MHz DIMM speeds.
- 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 PC3-10600 or 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 PC3-10600 or 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	

Memory

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

- 144GB, consisting of eighteen (18) 8GB PC3-10600 or PC3-8500 RDIMMs

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

Memory

Following are memory options available from HP:

Memory

Registered DIMMs (RDIMMs)

HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21
HP 4GB 2Rx4 PC3-10600R-9 Kit	500658-B21
HP 4GB 4Rx8 PC3-8500R-7 LP Kit	500660-B21
HP 8GB 2Rx4 PC3-10600R-9 Kit	500662-B21
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 1GB 1Rx8 PC3-10600E-9 Kit	500668-B21
HP 2GB 2Rx8 PC3-10600E-9 Kit	500670-B21

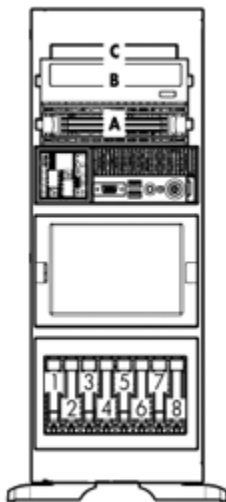
NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

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.

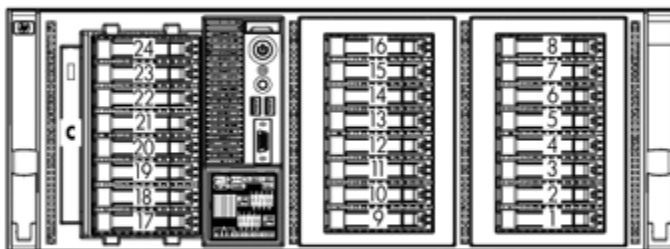
Storage



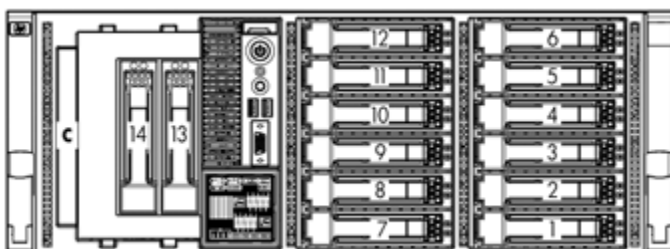
- A Removable media bay
- B (B) SATA DVD-ROM Drive (Standard in all BTO Models)
- C Optical Drive (blank)
- 1-8 Eight SFF SAS/SATA HD Bays (Standard in all BTO Models)



- A Removable media bay
- B SATA DVD-ROM Drive (Standard in all BTO Models)
- C Optical Drive (blank)
- 1-8 Eight SFF SAS/SATA HD Bays (Standard in all BTO Models)



- 1-24 Twenty-four small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives with optional drive cages (up to three 8 SFF drive cage can be installed)



- 1-14 Fourteen large form factor (LFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives with optional drive cages

Storage

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
Half-Height SATA DVD-ROM Optical Drive	Up to 2	A, B	Integrated IDE
Half-Height SATA DVD RW Optical Drive	Up to 2	A, B	Integrated IDE
HP Slim SATA DVD-ROM Optical Drive	Up to 2 NOTE: Also please use if the 3 drive cage is populated	C	Integrated IDE
HP Slim SATA DVD RW Optical Drive	Up to 2 NOTE: Also please use if the 3 drive cage is populated	C	Integrated IDE

Hard Drives

NOTE: Transfer rates of drives are dependent on the maximum transfer rate supported by the HBA or Controller. Refer to the HBA or Controller technical specifications for details.

SAS Hot Plug SFF Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP	Up to 24	1-8	HP Smart Array P800/512 BBWC Controller
300GB 3G SAS 10K DP		1-24	HP Smart Array P212/Zero Memory Controller
146GB 6G SAS 15K DP			HP Smart Array P212/ 256 MB Controller
146GB 3G SAS 15K DP			HP Smart Array P410/256 MB Controller
146GB 6G SAS 10K DP			HP Smart Array P410/512 MB BBWC Controller
146GB 3G SAS 10K DP			HP Smart Array P411/256 MB Controller
72GB 6G SAS 15K DP			HP Smart Array P411/512 MB BBWC Controller
72GB 3G SAS 15K DP			
72GB 3G SAS 10K DP			
36GB 3G SAS 15K DP			

SAS Hot Plug 3.5" Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
450GB 3G SAS 15K DP	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller
400GB 3G SAS 10K DP			HP Smart Array P212/Zero Memory Controller
146GB 3G SAS 15K DP			HP Smart Array P212/ 256 MB Controller
72GB 3G SAS 15K DP			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

SAS Hot Plug 3.5" Midline (MDL) Drives



Storage

	Quantity Supported	Position Supported	Controller
1TB 3G SAS 7.2K DP	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller
750GB 3G SAS 7.2K DP			HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

SATA Hot Plug SFF Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 24	1-8	HP Smart Array P800/512 BBWC Controller
120GB 1.5G SATA 5.4K		1-24	HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

SATA Hot Plug 3.5" Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K	Up to 14	1-14	HP Smart Array P800/512 BBWC Controller
750GB 3G SATA 7.2K			HP Smart Array P212/Zero Memory Controller
500GB 3G SATA 7.2K			HP Smart Array P212/ 256 MB Controller
250GB 3G SATA 7.2K			HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
50 Modular Smart Array	Up to 4	External	HP Smart Array P800/512 BBWC Controller
60 Modular Smart Array	Up to 4	External	HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
	Up to 8		HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller
			HP Smart Array P800/512 BBWC Controller
70 Modular Smart Array	Up to 2	External	HP Smart Array P212/Zero Memory Controller
			HP Smart Array P212/ 256 MB Controller
	Up to 4		HP Smart Array P800/512 BBWC Controller
			HP Smart Array P411/256 MB Controller
			HP Smart Array P411/512 MB BBWC Controller

Tape and Disk-Based Backup

NOTE: For a complete listing of compatible tape and disk-based backup offerings, please visit: www.hp.com/go/connect.

Position Supported	Controller	Part Number
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Storage

Internal USB Tape Drives DAT 40 USB DAT 72 USB DAT 160 USB	B,C	USB 2.0 Port	N/A
USB Tape Drives, External DAT 40 USB DAT 72 USB DAT 160 USB 1U Rack-Mount Kit	External	USB 2.0 Port	N/A
SAS Tape Drives, Internal DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS	B,C	HP Smart Array P212/Zero Memory Controller	462828-B21
SAS Tape Drives, Internal LTO-4 Ultrium 1840 SAS	B+C	HP Smart Array P212/Zero Memory Controller	462828-B21
SAS Tape Drives, External DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS LTO-4 Ultrium 1760 SAS LTO-4 Ultrium 1840 SAS 1U Rack-Mount 3U Rack-Mount	External	HP Smart Array P212/Zero Memory Controller	462828-B21
SAS Tape Automation, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/Zero Memory Controller	462828-B21
Fibre Tape Automation, External MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for detailed connectivity information.	N/A
HP StorageWorks RDX Removable Disk Backup System, Internal RDX160 RDX320	B,C	USB 2.0 Port	N/A



Storage

RDX500

HP StorageWorks RDX Removable Disk Backup System, External RDX160 RDX320 RDX500	External	USB 2.0 Port	N/A
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HP StorageWorks D2D Backup Systems D2D120 D2D130 D2D2503i D2D4004i	External	Embedded Network Controller	N/A
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Power Specifications

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

HP 750W Power Supply							
Part Number - AC 750W PSU	512327-B21						
Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
Maximum Rated Output Wattage	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
Max Rated Input Wattage Rating (Watts)	857	847	824	825	820	820	820
Max. Rated VA (Volt-Amp)	894	884	859	859	854	854	854
Efficiency (%) at Max. Rated Output Wattage	87.5	88.5	91	91	91.5	91.5	91.5
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	2925	2892	2812	2812	2797	2797	2797

Power Specifications

HP 1200W Power Supply Part Number - AC	500172-B21						
Operational Input Voltage Range (Vrms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	208	200	220	230	240
Maximum Rated Output Wattage	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	9.1	5.9
Max Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Max. Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%) at Max. Rated Output Wattage	86	87	89	89	89	89	89
Power Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Max. Inrush Current (A peak)	30	30	30	30	30	30	30
Max. Inrush Current duration (mS)	20	20	20	20	20	20	20
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

To review typical system power ratings use the Active Answers 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

To drill down to calculators:

- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL370 G6 or ML370 G6
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Technical Specifications

System Unit	Tower Dimensions (H x W x D) (with bezel)	18.52 x 9.75 x 29.12 in (47.04 x 24.77 x 73..96 cm)		
	Rack Dimensions (H x W x D) (with bezel)	6.88 x 19.03 x 27.53 in (17.48 x 48.34 x 69.93 cm)		
	Tower Weight (approximate)	Maximum	103.06 lbs (46.75 kg)	
		(two hard drives, power supply, and processor installed)		
		Minimum	66,14 lbs (30.00 kg)	
		(one hard drive, power supply, and processor installed)		
	Rack Weight (approximate)	Maximum	103.06 lbs (46,75 kg)	
		(two hard drives, power supply, and processor installed)		
		Minimum	55.12 lbs (25.00 kg)	
		(one hard drive, power supply, and processor installed)		
Input Requirements (per power supply)	Rated Line Voltage	90 - 132 VAC, 180 - 264 VAC		
	Rated Input Current	7.5A (at 100 VAC), 3.8A (at 200 VAC)		
	Rated Input Frequency	47 to 63 Hz		
	Rated Input Power	980W (at 100 VAC) 1035W (at 120 VAC) 1170W (at 240 VAC)		
BTU Rating	Maximum	460W - 1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC) 750W - 2892 BTU / hr (at 120 VAC), 2797 (at 240 VAC) 1200W - 3530 BTU / hr (at 120 VAC), 4600 (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			
Power Supply Output (per power supply)	Rated Steady-State Power	460 W (at 100 VAC)		
	Maximum Peak Power	460 W (at 200 VAC)		
		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		

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		<p>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.</p> <p>System performance may be reduced if operating with a fan fault or above 30°C (86°F).</p>
Relative Humidity (non-condensing)	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	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	3048 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	<p>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).</p>	
	Idle	
	L WAd	5.6 B for 1P Non-Redundant; 5.5 B for 2P Redundant
	L pAm	39 dB for 1P Non-Redundant; 39 dB for 2P Redundant
	Operating	
	L WAd	5.6 B for 1P Non-Redundant; 5.5 B for 2P Redundant
	L pAm	39 dB for 1P Non-Redundant; 39 dB for 2P Redundant
Emissions Classification (EMC)	NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	FCC Rating	Class B
	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

Smart Array P410i Controller	Dimensions (not including bracket)	Low Profile PCIe Form Factor 7.5 in x 9.5 in x 2.25 in (19.05 cm x 24.13 cm x 5.72 cm)	
	Disk Drive and Enclosure Interface - Transfer rate	3G SAS (Serial Attached SCSI)/6G SAS Capable 1.5G SATA (Serial ATA)/3G SATA Capable	
	SAS Connectors	2 internal (Mini-SAS) x8 wide port connectors	
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.	
	Server Interface	x8 5G PCIe 2.0 provides 4GB/s maximum bandwidth	
	SAS Speed	x8 3G SAS provides 2.4GB/s maximum bandwidth	
	Cache Memory	40-bit 256MB ECC protected cache (72-bit 512MB BBWC module upgrades available); transportable with battery-backed upgrade	
	Logical Drives Supported	Up to 12 logical drives	
	Maximum Logical Drive Capacity	Greater than 2TB	
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space	
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding)	NOTE: The minimum of 256 MB cache, battery kit, and Smart Array Advanced Pack License Key upgrade is required to enable RAID 6, 6+0
		RAID 5, 5+0 (Distributed Data Guarding)	NOTE: The 256MB upgrade is required to enable RAID 5 support on the Smart Array P410i.
		RAID 1+0 (Striping & Mirroring)	
		RAID 0 (Striping)	
Upgradeable Firmware	Upgradeable Firmware with recovery ROM feature		

NC375i Integrated Quad Port Multifunction Gigabit Server Adapter	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX		
	Data Transfer Method	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		
	Network Transfer Rate	PCI Express, four lanes (x4)		
		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		
Connector	1000Base-TX (Half and Full-Duplex)	2000 Mb/s		
	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)		
1000Base-TX		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.

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