Overview
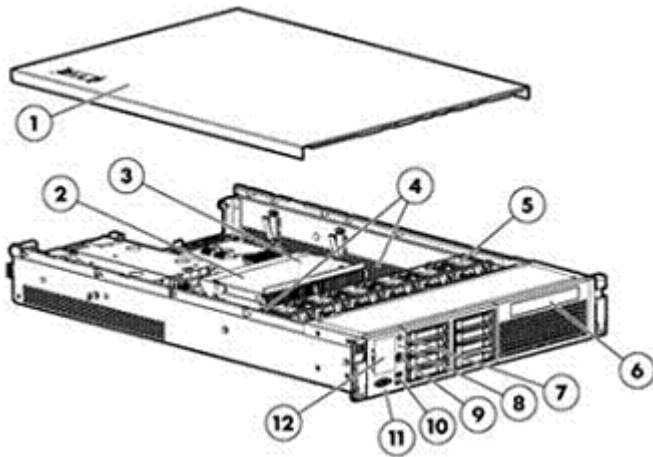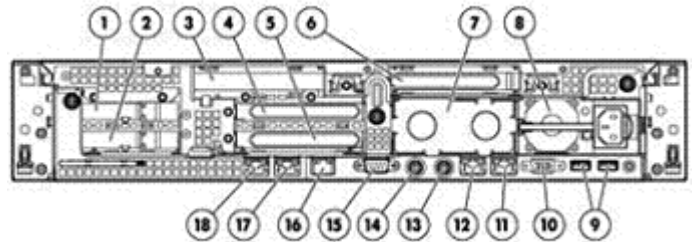

Front View:

1. Quick removal access panel
2. First Intel Processor
3. Second Intel Processor
4. Eighteen slots: DDR3 Registered (RDIMM) or Unbuffered (UDIMM) memory
5. Hot-plug fans, full N+1 redundancy
6. Slim Optical Bay (SATA DVD-RW Optical Drive included on Performance models)
7. UID LED button
8. Health LED
9. Power On/Standby button and system power LED
10. USB connectors (2)
11. Video connector
12. Systems Insight Display

Rear View:

1. PCI slot 5
2. PCI slot 6
3. PCI slot 4
4. PCI slot 2
5. PCI slot 3
6. PCI slot 1
7. Power supply 2
8. Power supply 1
9. USB connectors (2)
10. Video connector
11. NIC 1 connector
12. NIC 2 connector
13. Mouse connector
14. Keyboard connector
15. Serial connector
16. iLO 3 NIC connector
17. NIC 3 connector
18. NIC 4 connector

What's New

- The DL380 G7 Efficiency Model with the Intel® Xeon® L5630 2.13GHz 4C processor, and the new 460w 94% efficient power supply

At A Glance

The HP ProLiant DL380 G7 Server continues to deliver on its heritage of engineering excellence with increased flexibility and performance, enterprise-class uptime and HP Insight Control manageability, 2 socket Intel® Xeon® performance, and 2U density for a variety of applications.

- **Processors**:
  - Up to 2 Six-Core or Quad-Core Intel® Xeon® processor 5600/5500 sequence)

Overview

- o Intel® 5520 Chipset
- **Memory**:
  - o Total of 18 DIMM slots
  - o Up to 192 GB (16 GB kits populating12 DIMM slots), using PC3-8500R DDR3 Registered (RDIMM) memory, operating at 800MHz when fully populated at 2 DIMMs per Channel in 12 slots
    NOTE: If only one processor is installed, only half the DIMM slots are available.
    NOTE: when populating with the 16GB Memory Kits (Quad-Rank), only 12 DIMMs can be populated.
  - o Up to 48 GB, using PC3-10600E DDR3 Unbuffered (UDIMM) memory, operating at 1066MHz when fully populated at 2 DIMMs per Channel in 12 slots
  - o Two DIMMs Per Channel at 1333MHz supported with ROM update via ROM Based Setup Utility (RBSU) for 1333MHz RDIMMs. UDIMM support is only on 12-slot servers.
- **Storage Controller**:
  - o Entry Models: HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
  - o Base Models: HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
  - o Performance Models: HP Smart Array P410i/1G FBWC Controller (RAID 0/1/1+0/5/5+0)
  - o High Efficiency: HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
  - o Available upgrades: 1G FBWC, 512MB FBWC, 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)
- **Internal Drive Support**:
  - o Standard (8) small form factor (SFF) hot-plug drive bays to support Serial-attached SCSI (SAS) and Serial ATA (SATA) drives
    - ▪ Optional second drive cage for additional (8) SFF drive bays (total 16)
    - ▪ Optional cage for (6) Large Form Factor SAS/SATA hard drive bays
  - o Slimline media bay supporting Optical Drive (ships standard on performance models)
    NOTE: The Optical Drive option is not available when you upgrade with the additional 8 SFF drive cage, or in the LFF Models
- **Network Controller**:
  - o Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI
- **Expansion Slots**:
  - o Up to six available PCI-Express Gen2 slots, optional mixed PCI-X / PCI-Express or x16 PCI configurations available (see "Standard Features -Expansion Slots" section for more details)
- **Ports**:
  - o USB 2.0 support, 5 total ports: (2) ports up front; (2) ports in back; (1) port internal
  - o 1 internal Secure Digital (SD) slot
- **Redundancy**:
  - o Fully redundant hot plug fans (N+1)
  - o Hot plug power supply with optional redundancy (Included in Performance models)
- **Power Sources**:
  - o Dual Common Slot Bay for Right Sized, Hot plug and Redundant Power options
    - ▪ HP 1200W CS Platinum 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)
    - ▪ HP 1200W -48V DC Power Supply (optional)
- **Infrastructure Management**:
  - o Convenient slide-out Systems Insight Display for quick and easy front view server diagnostics, along with status LEDs, Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU)
  - o HP Integrated Lights-Out (iLO) for ProLiant provides simplified server setup, health monitoring and recovery, power and thermal control, and lights-out remote administration.
  - o HP Insight Control a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, control and optimize your IT infrastructure through a single, simple management console. Insight Control supports both Windows and Linux-based central management servers.

Overview

- ○ HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. This ultimately enables them to dynamically keep pace with the organization's changing business requirements.
- **Form Factor**:
  - ○ Rack (2U), (3.5-inch); Depth 27.25 inches (69.98 cm)
- **Operating Systems and Virtualization Software Support for ProLiant Servers**:
  - ○ Supports Windows, RHEL, SLES, OEL, VMware, and Citrix XenServer
- **Deployment/Serviceability**:
  - ○ System Insight Display on the front bezel for quick and easy server diagnostics
  - ○ Quick Deploy Rail System includes sliding universal rails, an ambidextrous cable management arm and quick release levers for fast and easy serviceability
  - ○ 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. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.
    NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
    http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

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

Processor	Six-Core Processors
One of the following depending on Model	Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/1/2/2)
	Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)
	Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)
	Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)
	Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)
	Quad-Core Processors
	Intel® Xeon® Processor X5677 (3.46 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)
	Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)
	Dual-Core Processors
	Intel® Xeon® Processor E5503 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)
	NOTE: HT indicates that the processor model supports Intel® Hyper-Threading Technology.
	NOTE: Turbo indicates the maximum potential frequency increment when using Intel® Turbo Boost Technology, with 6, 5, 4, 3, 2, and 1 cores active.
	NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.
	NOTE: For the Intel 5000 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.
	NOTE: Up to 2 processors supported. Performance configurations include two processors. Mixing different processor models is not supported.

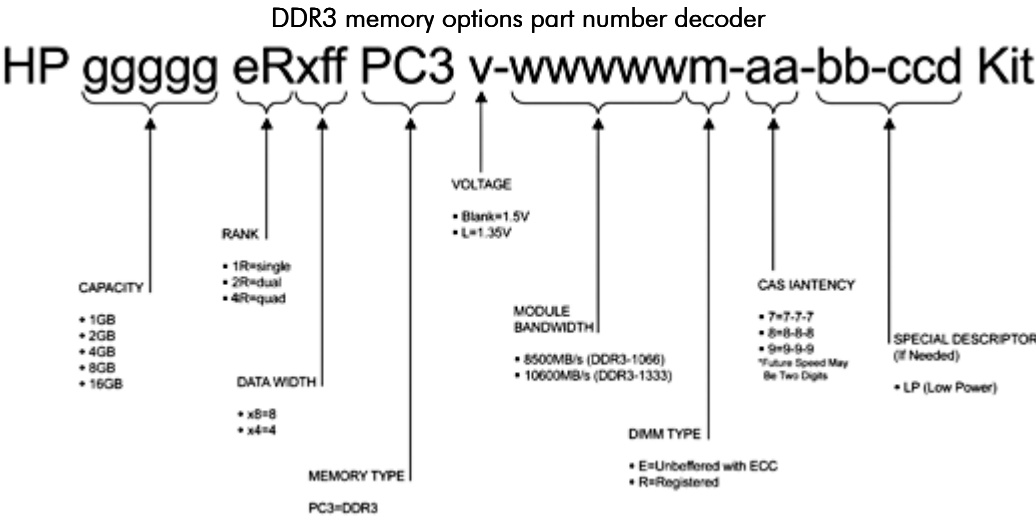| Cache Memory	Up to 12MB (1x12MB) Level 3 cache for all 5600 series processors
One of the following depending on Model	Up to 8MB (1 x 8MB) Level 3 cache for all 5500 series processors

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 (12 cores)

Standard Features

Memory Protection	Advanced ECC (multi-bit error protection)
	Mirroring mode
	Online Spare supported on 5600 Series
	Lockstep mode

Memory

Type	DDR3 Registered (RDIMM) and Unbuffered (UDIMM)
Standard (Performance Models)	12GB (6 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Base Models)	6GB (3 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Entry Models)	4GB (2 x 2GB) PC3-10600R (DDR3-1333) Registered DIMMs
Standard (Efficiency Models)	4GB (2 x 2GB) PC3-10600E (DDR3-1333) Unbuffered DIMMS
Maximum (RDIMM)	192GB (12 x 16GB)
Maximum (UDIMM)	48GB (12 x 2GB)

NOTE: If only one processor is installed, only half the DIMM slots are available
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.

DDR3 memory options part number decoder

HP ggggg eRxff PC3 v-wwwwwm-aa-bb-ccd Kit

CAPACITY
- 1GB
- 2GB
- 4GB
- 8GB
- 16GB

RANK
- 1R=single
- 2R=dual
- 4R=quad

DATA WIDTH
- x8=8
- x4=4

MEMORY TYPE
PC3=DDR3

VOLTAGE
- Blank=1.5V
- L=1.35V

MODULE BANDWIDTH
- 8500MB/s (DDR3-1066)
- 10600MB/s (DDR3-1333)

DIMM TYPE
- E=Unbuffered with ECC
- R=Registered

CAS IANTENCY
- 7=7-7-7
- 8=8-8-8
- 9=9-9-9
*Future Speed May Be Two Digits

SPECIAL DESCRIPTOR (If Needed)
- LP (Low Power)

Network Controller   Two HP NC382i Dual Port Multifunction Gigabit Server Adapters (four ports total) with TCP/IP Offload Engine, including support for Accelerated iSCSI

Expansion Slots
NOTE: The system board has 2 PCI connectors, but the below riser cards have the actual PCI slots, to which PCI cards attach.

Primary Riser (Standard)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCIe Gen2	X8	X16	7	Full Length, Full Height Slot	

Standard Features

	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	2	PCIe Gen2	X4	X8	10	Half Length, Full Height Slot	
	3	PCIe Gen2	X4	X8	13	Half Length, Full Height Slot	

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCIe Gen2	X8	X16	16	Full length, full height slot	
	5	PCIe Gen2	X4	X8	20	Half length, half height slot	
	6	PCIe Gen2	X4	X8	23	Half length, half height slot	

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

PCIe/PCI-X Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCI-X (133MHz)	64-bit	N/A	7	Full length, Full Height	
	2	PCI-E Gen2	X8	X16	11	Half Length, Full Height	
	3	PCI-E Gen2	X4	X8	15	Half Length, Full Height	

NOTE: PCI-X support is limited to PCI-X cards only.
*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

PCIe/PCI-X Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCI-X (133MHz)	64-bit	Not applicable	19	Full length, Full height slot	
	5	PCI-E Gen2	X8	X16	23	Half Length, Half Height	
	6	PCI-E Gen2	X4	X8	27	Half Length, Half Height	

Standard Features

NOTE: PCI-X support is limited to PCI-X cards only.
*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

x16 PCIe Riser (Optional Primary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	1	PCIe Gen2	x16	x16	13	Full Length, Full Height slot	Supports up to 150W; single wide cards only

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

x16 PCIe Riser (Optional Secondary)	Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
	4	PCIe Gen2	x16	x16	16	Full Length, Full Height slot	Supports up to 150W; single wide cards only

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.

Storage Controller
One of the following depending on Model

Entry Models	HP Smart Array P410i/Zero Memory Controller (RAID 0/1/1+0)
Base Models	HP Smart Array P410i/256 MB Controller (RAID 0/1/1+0/5/5+0)
Performance Models	HP Smart Array P410i/1G FBWC Controller (RAID 0/1/1+0/5/5+0)

Available upgrades: 1G FBWC, 512MB FBWC, 256MB, 512MB with BBWC, Battery kit upgrade (for the 256MB cache), and Smart Array Advanced Pack (SAAP)

Storage

Diskette Drive	None Standard
Optical Drive One of the following depending on Model	None Standard on Entry, High Efficiency, and Base Models NOTE: No support on LFF HD Models, or when upgrading to optional 8 SFF HD.
	HP Slim SATA DVD RW Optical Drive Standard on Performance Models NOTE: HP 64GB SSD Optical Drive Option Kit available. See options sections below contact HP for details.
Hard Drives	None Standard

Maximum Internal Storage

Hot Plug SFF SAS	8.0TB	16 x 500GB
Hot Plug LFF SAS	12.0TB	6 x 2TB

Standard Features

Interfaces	Serial	1
	Pointing Device (Mouse)	1
	Graphics	1
	Keyboard	1
	VGA	2 (1 front, 1 back)
	Network RJ-45	4
	iLO remote management port	1
	SD slot	1
	USB 2.0 Ports	5 total: 2 front, 2 back, 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.

Graphics   Integrated ATI ES1000, 64MB video standard

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

NOTE: Maximum resolution available via iLO 3 remote console for ProLiant is 1280 x 1024 (for 32 bit color) and 1600 x 1200 (DVR max resolution).

Form Factor   Rack (2U)
Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

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

The foundation pack includes:

- HP SmartStart
- HP Management
- HP ProLiant Firmware Maintenance

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

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

Standard Features

	eliminate receiving unnecessary duplicate media.
HP Integrated Lights-Out (iLO) for ProLiant	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control, and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO
HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console.

Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol

HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight. |
| HP Insight Dynamics for ProLiant | HP Insight Dynamics for ProLiant, a product option, is advanced infrastructure management software that enables IT staff to instantly adjust their environments to meet dynamic business demands by provisioning, optimizing and protecting complex infrastructure in minutes. It's a powerful toolkit, integrated-by-design, that accelerates complex technology projects and simplifies daily operations, transforming data center economics. With Insight Dynamics IT professionals can plan capacity and power continuously, balance workloads across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP StorageWorks Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location.

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

Standard Features

Industry Standard Compliance	ACPI 2.0 Compliant PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB 2.0 Support
Security	Power-on password Keyboard password QuickLock, Network Server Mode Serial interface control Administrator's password
Security - Trusted Platform Module	Trusted Platform Module option kit The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM **NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.
Server Power Cords	High voltage power cord ships standard with all part numbers. **NOTE:** HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords (227099-001) 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 6-foot C-14 to C13 power cord (142258-001). If a user wishes to power a ProLiant DL server using a110V receptacle (NEMA-15), the 12-foot NEMA 5-15 to C13 power cord (227099-001) must be ordered separately. Also available: 110 volt 6-Foot NEMA 5-15p to C13 (AF556A).
UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

QuickSpecs

HP ProLiant DL380 Generation 7 (G7)

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. Common Slot (CS) designates commonality of the power supply across multiple ProLiant servers. HP's new Common Slot power supplies are designed for highest efficiency to provide power efficiency without degrading performance of the ProLiant. Power Supplies will have efficiency ratings up to 94%. 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, we suggest that you use the HP Power Advisor to decide the "Right-Size" for your configuration. All HP Common Slot power sources are UL, CE Mark Compliant, Hot Plug and Redundant.

Common Slot ProLiant	NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same type, all HP 460W, all HP750W, all 1200w 94%, or all -48V DC. If non-matched power supplies are inserted you will get errors and operation will fail.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP offers several Power Supply Options. HP's ProLiant Common Slot Power supplies meet multiple Energy Efficiency Initiatives:

- 460W, 92%: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD
- 460W, 94%: Climate Savers Computing Initiative Platinum and ECOS Consulting 80PLUS Platinum
- 750W, 92%: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD
- 750W, 94%: Climate Savers Computing Initiative Platinum and ECOS Consulting 80PLUS Platinum
- 1200W, 94%: Climate Savers Computing Initiative Platinum and ECOS Consulting 80PLUS Platinum
- 1200W, -48V DC: Climate Savers Computing Initiative Bronze and ECOS Consulting 80PLUS Bronze

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

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

System Fans	Fully redundant hot plug fans ship standard (N+1).
NOTE: One processor models include four fans. Two processor models include six fans.

DA - 13595   Worldwide — Version 14 — August 18, 2010   Page 11

Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Enterprise Linux (OEL) VMware Citrix XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page www.hp.com/support/DL380G7.
Rack Airflow Requirements	**Rack 10000 G2 series Cabinets** The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: ● Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). ● Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: 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/dl380.
Rack Kit	Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management. NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the HP ProLiant DL380 in 7000 series racks. The DL380 Cable Management Arm is not supported on 7000 series racks. NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.
Telco Rack Support	Support for all 2-post Telco racks requires the use of the standard rack kit and an additional option kit from Rack Solutions at: http://www.hp.com/go/rackandpower

QuickSpecs

Standard Features

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, EVA7xxx, 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.
HPC Interconnects	**NOTE:** High Performance Computing (HPC) interconnect technologies are available for this server under the HP Cluster Platform product portfolio. These high-speed interconnects are fully supported by HP when they are part of these configure to order clusters. Solutions can be defined with a lot of flexibility with the help of configuration tools. Please visit the following URL to configure HPC Clusters with InfiniBand Interconnects: http://www.hp.com/techservers/clusters/ucp/index.html
	InfiniBand PCI-Express adapters

Service and Support	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 capitalize 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

Standard Features

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

QuickSpecs

Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

HP DL380 G7 Performance Models Six-Core Models HP DL380G7 X5660 583970-xx1 HP DL380G7 X5650 583966-xx1	Processor(s) Two of the following depending on Model	(2) Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) (2) Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/1GB with FBWC
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	HP Slim SATA DVD RW drive
	Power Supply	(2) 750W Hot Plug Power Supplies
	Fans	(6) (N+1 redundancy standard)
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

HP DL380 G7 Base Models Quad-Core Models HP DL380G7 E5640 583967-xx1 HP DL380G7 E5630 589150-xx1 HP DL380G7 E5620 589152-xx1	Processor(s) One of the following depending on Model	(1) Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) (1) Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) 1) Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)
	Cache Memory	12MB (1 x 12MB) Level 3 cache
	Memory	6 GB (3 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/256MB Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	None ship standard
	Power Supply	(1) 460W Hot Plug Power Supply
	Fans	(4) (N+1 redundancy standard)
	Form Factor	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

Models

HP DL380 G7 Entry Models Quad-Core Models HP DL380G7 E5506 583968-xx1	Processor(s)	(1) Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)
	Cache Memory	4MB (1 x 4MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	None ship standard
	Power Supply	(1) 460W Hot Plug Power Supply
	Fans	(4) (N+1 redundancy standard)
	Form Factor	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

HP DL380 G7 Efficiency Model Quad-Core Models HP DL380G7 L5630 583969-xx1	Processor(s)	Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)
	Cache Memory	12MB (1 x 4MB) Level 3 cache
	Memory	4 GB (2 x 2 GB) PC3-10600E (DDR3-1333) Unbuffered DIMMs
	Network Controller	Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
	Storage Controller	HP Smart Array P410i/Zero Memory Controller
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF SAS/SATA HDD Bays Optional: 16 SFF SAS/SATA HDD Bays
	Optical Drive	None ship standard
	Power Supply	(1) 460W 94% Efficient Hot Plug Power Supply
	Fans	(4) (N+1 redundancy standard)
	Form Factor	Rack (2U), Height 3.38-inch (8.59 cm); Width: 17.25 (44.54 cm); Depth: 27.25 inches (69.98 cm)

Country Code Key	xx = 00	U.S.
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC

Configuration Information - Factory Integrated Models

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

HP Models   HP DL380G7 SFF CTO Chassis   583914-B21

Factory Integrated Model ships with:

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
Smart Array P410i Controller
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIE (x16 connector)
- Slot 2 - HL/FH x4 PCIE (x8 connector)
- Slot 3 - HL/FH x4 PCIE (x8 connector)
  - Additional Slots may be added via selections from the PCI Information and Options subsection

System Fans - 4 (2 additional fans included with second processor)
Drive Cage - 8-SFF (Second SFF drive cage optional)
USB - 2 Rear, 2 Front, 1 Internal, 1 SD slot
Server Management - (iLO 3) (embedded)
NOTE: Power Supply not included - choose from Options section

HP DL380G7 LFF CTO Chassis   583917-B21

Factory Integrated Model ships with:

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters
Smart Array P410i Controller
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIE (x16 connector)
- Slot 2 - HL/FH x4 PCIE (x8 connector)
- Slot 3 - HL/FH x4 PCIE (x8 connector)
  - Additional Slots may be added via selections from the PCI Information and Options subsection

Drive Cage - 6-LFF
System Fans - 4 (2 additional fans included with second processor)
USB - 2 Rear, 2 Front, 1 Internal, 1 SD slot
Server Management - (iLO 3) (embedded)
NOTE: Power Supply not included - choose from Options section
NOTE: On LFF Model Optional Optical Drive is not available

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

HP Processors   NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.

Six-Core Processors

Configuration Information - Factory Integrated Models

	Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W,DDR3-1333, HT, Turbo 1/1/1/1/2/2) FIO	587498-L21
	Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) FIO	587493-L21
	Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) FIO	587491-L21
	Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3) FIO	587482-L21
	Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4) FIO	587507-L21
	Quad-Core Processors	
	Intel® Xeon® Processor X5677 (3.46 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/2/2) FIO	614547-L21
	Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) FIO	587480-L21
	Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) FIO	587478-L21
	Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2) FIO	587476-L21
	Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2) FIO	587505-L21
	Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800) FIO	587495-L21
	Dual-Core Processors	
	Intel® Xeon® Processor E5503 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800) FIO	587500-L21
HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21

Configuration Information - Factory Integrated Models

	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21

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

HP Power Supplies

NOTE: Refer to HP Power Advisor when selecting a power supply for your configuration, www.hp.com/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 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

460W HE 12V Hot Plug AC Power Supply Kit	503296-B21
HP 460W Common Slot Platinum Power Supply Kit	593188-B21
HP 750W Common Slot High Efficiency Power Supply Kit	512327-B21
HP 750W Common Slot Platinum Power Supply Kit	593831-B21
HP 1200W Common Slot High Efficiency Power Supply Kit	578322-B21
HP 1200W -48V DC Common Slot Power Supply	437573-B21

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

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

Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

HP Storage Controllers

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

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

Optional Upgrades

Battery Kit upgrade	462969-B21

NOTE: This is an option for the HP Smart Array P410i Controller (P410i is standard integrated controller).
NOTE: To enable BBWC on the 256MB cache on P410i.

Configuration Information - Factory Integrated Models

	512MB BBWC	462967-B21
	NOTE: This is an option for the HP Smart Array P410i Controller (P410i is standard integrated controller).	
	NOTE: Battery included. When used with the embedded HP Smart Array P410i controller.	
	512MB Flash Backed Write Cache	534916-B21
	NOTE: This is an option for the HP Smart Array P410i Controller (P410i is standard integrated controller).	
	1G Flash Backed Write Cache	534562-B21
	NOTE: This is an option for the HP Smart Array P410i Controller (P410i is standard integrated controller).	

HP Performance Packs   The HP ProLiant DL380 performance packs are necessary to configure a HP ProLiant DL380 Performance Model. HP ProLiant DL380 Performance model includes the latest performance technologies and enterprise class availability features pre-installed for convenience and value.

- The performance pack includes:
  - 2nd processor
  - 750-watt redundant power supply
  - 1GB FBWC cache module for P410i
  - One DL380 G6 HP Fan kit (contains qty of 2)
  - Insight Control license with 1 yr 24x7 support

NOTE: Must also select Slimline SATA DVD RW Optical Drive (481043-B21) to achieve parity to DL380 High Performance Models.

	HP DL380G7 X5650 HPM FIO Perf Pack	593824-B21
	HP DL380G7 X5660 HPM FIO Perf Pack	593825-B21
HP Insight Software	HP Insight Control, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	582765-B21
	HP Insight Control for Linux, No Media 1-Server License Factory-Integratable Option (FIO) including 1 year of 24x7 Technical Support and Updates	TC203A

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 integrated at the factory. Contact your local sales representative for additional information.

HP Unique Options	HP 8SFF CAGE 380G6	516914-B21
	NOTE: Second drive cage installation replaces internal optical bay.	
	NOTE: Second drive cage requires second controller or HP SAS Expander Card (468406-B21).	
	HP DL380G6 PCI-E 3 Slot 1x8 2x4 Riser Kit	500579-B21

HP Processors	**Six-Core Processors**	
	Intel® Xeon® Processor X5680 (3.33 GHz, 12MB L3 Cache, 130W,DDR3-1333, HT, Turbo 1/1/1/1/2/2)	587498-B21
	Intel® Xeon® Processor X5670 (2.93 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)	587493-B21
	Intel® Xeon® Processor X5660 (2.80 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)	587491-B21
	Intel® Xeon® Processor X5650 (2.66 GHz, 12MB L3 Cache, 95W, DDR3-1333, HT, Turbo 2/2/2/2/3/3)	587482-B21
	Intel® Xeon® Processor L5640 (2.26 GHz, 12MB L3 Cache, 60W, DDR3-1333, HT, Turbo 2/2/3/3/4/4)	587507-B21
	Quad-Core Processors	
	Intel® Xeon® Processor X5677 (3.46 GHz, 12MB L3 Cache, 130W, DDR3-1333, HT, Turbo 1/1/1/2)	614547-B21
	Intel® Xeon® Processor E5640 (2.66 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	587480-B21
	Intel® Xeon® Processor E5630 (2.53 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	587478-B21
	Intel® Xeon® Processor E5620 (2.40 GHz, 12MB L3 Cache, 80W, DDR3-1066, HT, Turbo 1/1/2/2)	587476-B21
	Intel® Xeon® Processor L5630 (2.13 GHz, 12MB L3 Cache, 40W, DDR3-1066, HT, Turbo 1/1/2/2)	587505-B21
	Intel® Xeon® Processor E5506 (2.13 GHz, 4MB L3 Cache, 80W, DDR3-800)	587495-B21
	Dual-Core Processors	
	Intel® Xeon® Processor E5503 (2.00 GHz, 4MB L3 Cache, 80W, DDR3-800)	587500-B21

Core Options

HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	593339-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit NOTE: Low Voltage DIMMs can only be used with Intel® Xeon® processor 5600 series processors.	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 1GB (1x1GB) Single Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500668-B21
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500670-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3-10600 (DDR3-1333) Unbuffered CAS-9 Memory Kit	500672-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient NOTE: PC3L is a low voltage memory.	

HP Optical Drives	HP Slim SATA DVD RW Optical Drive NOTE: Included in performance models.	481043-B21
	HP Slim SATA DVD-ROM Optical Drive	481041-B21
	NOTE: There is no optical drive support in the LFF Hard Drive models, or optional 8 SFF HDD	

HP Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components. NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	

Core Options

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 146GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507125-B21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512545-B21

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516814-B21

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

HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)

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

HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
HP 160GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	530888-B21

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 5.4K rpm SFF (2.5-inch) Entry 1yr Warranty Hard Drive	460355-B21

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

HP 250GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	571230-B21
HP 160GB 3G SATA 7.2K rpm LFF (3.5-inch) Entry 1yr Warranty Hard Drive	458945-B21

SATA Hot Plug Midline (MDL) Solid State Drives

HP 60GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572071-B21
HP 120GB 3G SATA SFF (2.5-inch) Midline 1yr Warranty Solid State Drive	572073-B21

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

HP 60GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570761-B21
HP 120GB 3G SATA LFF (3.5-inch) Midline 1yr Warranty Solid State Drive	570763-B21

Core Options

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13415_div/13415_div.html
(Worldwide)

HP Networking	**Gigabit Ethernet adapters**	
	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
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21

10 Gigabit Ethernet Adapters
NOTE: No more than two 10GbE I/O devices are supported in a single ProLiant server.
NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.
NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

	HP NC522SFP Dual Port 10GbE Server Adapter	468332-B21
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21

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

HP InfiniBand	HP IB 4X QDR CX-2 PCI-e G2 Dual Port HCA	592520-B21
	HP IB 4X DDR CX-2 PCI-e G2 Dual Port HCA	592521-B21
	HP 4X QDR PCI-e G2 QLogic InfiniBand Dual Port HCA	583211-B21

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13078_div/13078_div.html

HP I/O Expansion Options	HP DL380G6/G7 PCI-E 1x8 2x4 Riser Kit	500579-B21
	NOTE: Supports the HP ProLiant DL380 G7 server.	
	HP DL38X PCI-X riser kit (1) PCI-X, (1) x8, (1) x4)	494322-B21
	HP DL38X (1) x16 PCI-E riser kit	494323-B21
	HP DL38X 10G Dual Port (2) x8 PCI-E riser kit	494326-B21

QuickSpecs

Core Options

HP Power Supplies	**CAUTION:** 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.	
	460W HE 12V Hot Plug AC Power Supply Kit	503296-B21
	HP 460W Common Slot Platinum Power Supply Kit	593188-B21
	HP 750W Common Slot High Efficiency Power Supply Kit	512327-B21
	HP 750W Common Slot Platinum Power Supply Kit	593831-B21
	HP 1200W Common Slot High Efficiency Power Supply Kit	578322-B21
	HP 1200W -48V DC Common Slot Power Supply	437573-B21

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

QuickSpecs

Additional Options

HP Insight Software	**HP Insight Control**	
	HP Insight Control, Single-Server License including 1 year of 24x7 Technical Support and Updates	452148-B22
	HP Insight Control suite, No Media, Electronic License including 1 year of 24x7 Technical Support and Updates	T9074BAE
	HP Insight Control, Electronic License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC278AAE
	HP Insight Control, Tracking License for bundling with ProLiant ML/DL server, including 1 year of 24x7 Technical Support and Updates	TC275A

NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key.
NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.
NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service.
NOTE: Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.
NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html

HP Insight Control for Linux

	HP Insight Control for Linux, No Media, 1-server license for bundling with Tower, Rack, and Scalable servers, including one year of 24x7 Technical Support and Updates, Electronic	TC203AAE
	HP Insight Control for Linux, 1-server license, including one year of 24x7 Technical Support and Updates, Electronic	TC213AAE
	HP Insight Control for Linux, No Media, 1-Server license, including one year of 24x7 Technical Support and Updates	TC209A
	HP Insight Control for Linux, Media pack (DVD) - No licenses included	TC208A

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

HP Integrated Lights-Out (iLO) Advanced

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

Additional Options

	HP ProLiant Essentials Integrated Lights-Out Advanced Pack, Electronic, including 1 year of 24x7 Technical Support and Updates	TA850AAE
	HP Insight Software Media Kit	436222-B21

NOTE: Insight Software DVD media without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Insight Dynamics, HP Insight Control for Microsoft System Center, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.

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

NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent.

NOTE: For additional license kits, including electronic delivery options, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html

HP Drive Cage Options	HP 8SFF CAGE 380G6	516914-B21

NOTE: Supports the HP ProLiant DL380 G7 server.
NOTE: Second drive cage installation replaces internal optical bay.
NOTE: Second drive cage requires second controller or HP SAS Expander Card (468406-B21).

HP I/O Accelerator Options	HP 160GB SLC PCIe ioDrive	600278-B21

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

	HP 320GB MLC PCIe ioDrive	600279-B21

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

	HP 320GB SLC PCIe ioDrive Duo	600281-B21
	HP 640GB MLC PCIe ioDrive Duo	600282-B21

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

HP Security - TPM	HP Trusted Platform Module Option Kit	488069-B21

HP Storage Controllers	SAS Controllers	
	Smart Array P410 Controller	
	HP Smart Array P410/256 MB Controller	462862-B21
	HP Smart Array P410/512 MB with BBWC Controller	462864-B21
	HP Smart Array P410/512MB with FBWC	578230-B21
	HP Smart Array P410/1G with FBWC	572532-B21
	Smart Array P411 Controller	
	HP Smart Array P411/256 MB Controller	462830-B21

Additional Options

HP Smart Array P411/512 MB with BBWC Controller	462832-B21
HP Smart Array P411/512MB Flash Backed Write Cache	578229-B21
HP Smart Array P411/1G Flash Backed Write Cache	572531-B21

Smart Array P812 Controller

HP Smart Array P812/1G Flash Backed Cache Controller	487204-B21

Optional Upgrades

256 MB Cache Module — 462968-B21
NOTE: Supported on HP Smart Array P212 Controller and as an upgrade on HP Smart Array P410i (Zero Memory).

512MB BBWC — 462967-B21

1G Flash Backed Write Cache — 534562-B21
NOTE: Supported on the Smart Array P410i Controller only.

512MB Flash Backed Write Cache — 534916-B21
NOTE: Supported on the Smart Array P410i Controller only.

512MB Flash Backed Write Cache — 534916-B21

1G Flash Backed Write Cache — 534562-B21

HP Smart Array Advanced Pack No Media 1-Server license including 1yr 24x7 Technical Support — 516471-B21
NOTE: This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services.
NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/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)
http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html
(Smart Array P812 Controller)
http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html
(Smart Array Advanced Pack)

SAS Controller Options

HP SAS Expander Card — 468406-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: For use with additional 8 SFF drive cage (516914-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)

Additional Options

	HP SC08e 6Gb 2-ports Ext PCIe SAS HBA	614988-B21

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

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

HP Backup & Recovery Software

HP Data Protector Express

HP Data Protector Express 4.0 SP1 Backup Server	BB117BA
HP Data Protector Express 4.0 SP1 for Microsoft Small Business Server	BB118BA
HP Data Protector Express Backup Server 4.0 SP1Upgrade from Data Protector Express Single Server Edition	BB117BT

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

---

HP Tape Backup

NOTE: For the complete range of StorageWorks tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP StorageWorks tape backup products see: http://www.hp.com/go/connect.

HP StorageWorks DAT 320 USB Tape Drive in 1U USB Rack Kit	AP835A
HP StorageWorks DAT 320 SAS Internal Tape Drive	AJ830A

NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

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

NOTE: For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks LTO-4 Ultrium 1760 Tape Drive in 1U SAS Rack Kit	EH946B

NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks LTO-5 Ultrium 3000 Tape Drive in 1U SAS Rack Kit	EJ014A

NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks 1/8 G2 LTO-3 Ultrium 3000 SAS Tape Autoloader	BL536A

NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

HP StorageWorks MSL2024 Tape Library with one LTO-5 Ultrium 3000 SAS Drive	BL537A

NOTE: Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.

Additional Options

HP Disk Backup	**NOTE:** For the complete range of StorageWorks D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of StorageWorks RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP StorageWorks disk backup products see: http://www.hp.com/go/connect.	

HP StorageWorks D2D Backup Systems with Backup Data Deduplication

HP StorageWorks D2D2502i Backup System	EJ001A

NOTE: 1.5TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D2504i Backup System	EJ002B

NOTE: 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D4004i Backup System	EH938A

NOTE: 3.0TB (expandable to 7.5TB) of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.

HP StorageWorks D2D4112fc Backup System	EH993B

NOTE: 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.

HP StorageWorks RDX Removable Disk Backup Systems USB

HP StorageWorks RDX320 Internal Removable Disk Backup System for DL Servers	AP725A

NOTE: 320GB of disk capacity per data cartridge.

HP StorageWorks RDX500 Internal Removable Disk Backup System for DL Servers	AP726A

NOTE: 500GB of disk capacity per data cartridge.

HP StorageWorks RDX750 Internal Removable Disk Backup System for DL Servers	AW578A

NOTE: 750GB of disk capacity per data cartridge.

HP StorageWorks Options	**StorageWorks Fibre Channel HBA**	

NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

Brocade Fibre Channel HBAs

HP StorageWorks 81B PCI-e FC HBA Single Port	AP769A
HP StorageWorks 82B PCI-e FC HBA Dual Port	AP770A
HP StorageWorks 41B 4Gb PCI-e FC HBA	AP767A
HP StorageWorks 42B 4Gb Dual-Port PCI-e FC HBA	AP768A

Emulex Fibre Channel HBAs

HP StorageWorks 81E PCI-e FC HBA Single Port	AJ762A
HP StorageWorks 82E PCI-e FC HBA Dual Port	AJ763A
HP StorageWorks FC2142 4Gb PCI-e HBA	A8002A
HP StorageWorks FC2242 Dual Channel 4Gb PCI-e HBA	A8003A

QLogic Fibre Channel HBAs

Additional Options

HP StorageWorks 81Q PCI-e FC HBA Single Port	AK344A
HP StorageWorks 82Q PCI-e FC HBA Dual Port	AJ764A
HP StorageWorks FC1142 4Gb PCI-e HBA	AE311A
HP StorageWorks FC1242 Dual Channel 4Gb PCI-e HBA	AE312A

StorageWorks SCSI HBA

HP U320e SCSI Host Bus Adapter	AH627A

NOTE: Recommended HBA for MSL SCSI Tape Library connect.

StorageWorks Converged Network Adapter

HP CN1000E 2P Converged Network Adapter	AW520A

HP Disk Storage Systems	**Disk Enclosures**	
	HP StorageWorks D2600 Disk Enclosure	AJ940A
	HP StorageWorks D2700 Disk Enclosure	AJ941A

NOTE: Please see the QuickSpecs for additional options and configuration information at:
http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP Rack-Mountable R5500 UPS

HP R5500 VA UPS, INTL	AF416A
HP R5500 VA UPS, NA/JPN	AF426A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/11871_div/11871_div.html (Worldwide)

HP R/T3000 Uninterruptible Power System (UPS)

HP R/T3000 UPS, High voltage, NA/JPN	AF453A
HP R/T3000 UPS, High voltage, detachable inlet cord INTL	AF454A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/13417_div/13417_div.html (Worldwide)
NOTE: For additional information on HP Uninterruptible Power Systems please go to:
www.hp.com/servers/rackups.
NOTE: For additional information on sizing your server, please reference:
http://www.upssizer.com.

Additional Options

Power Distribution Units	**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
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6 kVA S1324 Monitored PDU- single input, 3Ø, 24A (NA/JPN)	AF504A
	HP 8.3 S1140 Monitored PDU- single input, 1Ø, 40A (NA/JPN)	AF506A
	HP 11 kVA S1316 Monitored PDU- single input, 3Ø, 16A (INTL)	AF508A
	HP 7.3 kVA S1132 Monitored PDU- single input, 1Ø, 32A (INTL)	AF510A

NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)

Modular Power Distribution Units 1U/0U (Up to 32 outlets)
NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).

HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC) (NA, Japan)	252663-D72
8.3kVA Model - mPDU, 40A, High (power cord attached) (NA/JPN)	252663-D73
HP Modular Power Distribution Units (mPDU), High Volt Model, 32A (200-240 VAC) (Int'l)	252663-B31
HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) (WW)	252663-B24

NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)
NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.

HP Rack Series	**HP Rack 10000 G2 Series** (Carbon/Graphite Metallic)	
	10642 G2 (42U) Rack Cabinet - Pallet	AF001A
	10642 G2 (42U) Rack Cabinet - Shock Pallet	AF002A

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

HP Rack Options	**HP Server Console Switches**	
	HP Server console switch 0x2x8	AF616A
	HP Server console switch 0x2x16	AF617A

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

HP Server Console Switch G2 with Virtual Media & CAC

	0x2x16 KVM Server Console G2 Switch with Virtual Media and CAC	AF618A
	0x2x32 KVM Server Console G2 Switch with Virtual Media and CAC	AF619A

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

HP IP Console Switch G2 with Virtual Media & CAC

	1x1Ex8 KVM IP Console Switch G2 with Virtual Media and CAC	AF620A
	2x1Ex16 KVM IP Console Switch G2 with Virtual Media and CAC	AF621A
	4x1Ex32 KVM IP Console Switch G2 with Virtual Media and CAC	AF622A

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

HP USB and SD options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB SD Flash Media Kit	580387-B21

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

HP 2GB USB Flash Media Drive Key   608447-B21
NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.

Additional Options

HP Care Pack Services	**Hardware Services On-site Service**	
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 3 Years, Electronic	U4544E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 4 Years, Electronic	U8101E
	4-Hour On-site Service, 5-Day x 13-Hour Coverage, 5 Years, Electronic	U8067E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	U4545E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	U8118E
	4-Hour On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	U8084E
	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	U4546E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	U9738E
	6-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	U9737E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 3 Years, Electronic	UP717E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 4 Years, Electronic	UP718E
	24-Hour Call to Repair, On-site Service, 7-Day x 24-Hour Coverage, 5 Years, Electronic	UP719E
	Installation & Start-up Services	
	Hardware Installation, Electronic	U4554E
	Hardware Support, 4 Years	UA010E
	Hardware Support, 5 Years	UA009E
	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	U4555E
	Installation and Startup for Essentials Rapid Deployment Pack, Electronic	U5683E
	Install ProLiant Add On/In Option SVC	UH745E
	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	U4556E
	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	U4557E
	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	U6312E

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

Memory

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".
DDR3 memory population guidelines

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

Some DIMM installation guidelines are summarized below:

- For servers with eighteen (18) memory slots:
    - There are three (3) channels per processor; six (6) channels per server
    - There are three (3) DIMM slots for each memory channel; eighteen (18) total slots
    - Memory channel 1 consists of the three (3) DIMMs that are closest to the processor
    - Memory channel 3 consists of the three (3) DIMMs that are furthest from the processor
- DIMM slots that are white should be populated first
- Do not mix Unbuffered memory (UDIMMs) with Registered memory (RDIMMs)
- Do not install DIMMs if the corresponding processor is not installed
- If only one processor is installed in a 2CPU system, only half of the DIMM slots are available
- To maximize performance, balance the total memory capacity between all installed processors
- It is not required, but it is recommended to load the channels similarly if possible
- If any Quad rank DIMMs are installed, all channels are limited to only 2 DIMMs 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
- If mixing DIMM voltage is a requirement, please note that the DIMMs will run at 1.5V since all 1.35V are capable of supporting 1.5V operations

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

QuickSpecs

HP ProLiant DL380 Generation 7 (G7)

Memory

*supported with ROM update via ROM Based Setup Utility (RBSU). UDIMM support is only on 12-slot servers

NOTES:

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

DA - 13595   Worldwide — Version 14 — August 18, 2010   Page 36

Memory

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

Standard memory plus optional memory (1 CPU model)

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

	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 (1 CPU model)

- 96GB, consisting of six (6) 16GB quad-rank PC3-8500 RDIMMs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB DIMM	2	D; empty	
	3	A; 16GB DIMM	3	A; empty	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB DIMM	5	E; empty	
	6	B; 16GB DIMM	6	B; empty	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB DIMM	8	F; empty	
	9	C; 16GB DIMM	9	C; empty	

UDIMM maximum configuration (1 CPU model)

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

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

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

- 192GB, consisting of twelve (12) 16GB quad-rank PC3-8500 RDIMMs

QuickSpecs

Memory

	CPU1		CPU2		
	slot #	population order	slot #	population order	
Chnl 1	1	G; empty	1	G; empty	Chnl 1
	2	D; 16GB DIMM	2	D; 16GB DIMM	
	3	A; 16GB DIMM	3	A; 16GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 16GB DIMM	5	E; 16GB DIMM	
	6	B; 16GB DIMM	6	B; 16GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 16GB DIMM	8	F; 16GB DIMM	
	9	C; 16GB DIMM	9	C; 16GB DIMM	

UDIMM maximum configuration

- 48GB, consisting of twelve (12) 4GB 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; 4GB DIMM	2	D; 4GB DIMM	
	3	A; 4GB DIMM	3	A; 4GB DIMM	
Chnl 2	4	H; empty	4	H; empty	Chnl 2
	5	E; 4GB DIMM	5	E; 4GB DIMM	
	6	B; 4GB DIMM	6	B; 4GB DIMM	
Chnl 3	7	I; empty	7	I; empty	Chnl 3
	8	F; 4GB DIMM	8	F; 4GB DIMM	
	9	C; 4GB DIMM	9	C; 4GB DIMM	

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

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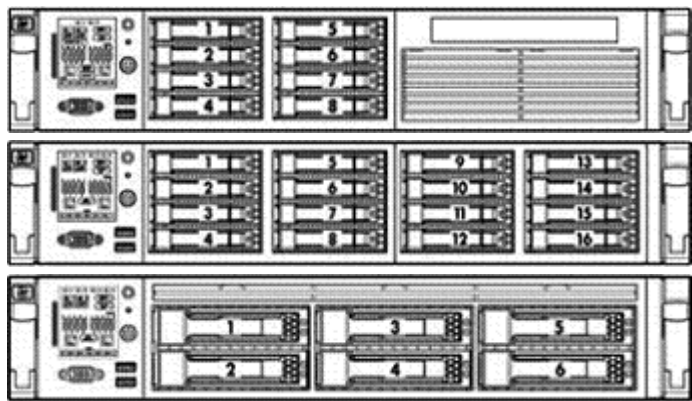- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB

Memory

Following are memory options available from HP:

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

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

Storage

1-8	Eight SFF SAS hot plug hard drive bays
1-16	Sixteen SFF SAS hot plug hard drive bays NOTE: This configuration does not support optical drive.
1-6	Six LFF SAS hot plug hard drive bays NOTE: This configuration does not support optical drive.

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
HP Slim SATA DVD RW Optical Drive NOTE: Included in performance models.	Only 1 available removable media bay	Slimline bay	Integrated SATA NOTE: Optional
HP Slim SATA DVD-ROM Optical Drive	Only 1 available removable media bay	Slimline bay	Integrated SATA NOTE: Optional

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

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

	Quantity Supported	Position Supported	Controller
300GB 6G SAS 10K DP 146GB 6G SAS 15K DP 146GB 6G SAS 10K DP 72GB 6G SAS 15K DP	Up to 8	1-8	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

NOTE: Second SFF drive cage requires second controller or HP SAS Expander Card (PN 468406-B21).

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

Storage

	Quantity Supported	Position Supported	Controller
600GB 6G SAS 15K DP 450GB 6G SAS 15K DP 300GB 6G SAS 15K DP	Up to 6	1-6	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
500GB 6G SAS 7.2K DP	Up to 8	1-8	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
2TB 6G SAS 7.2K DP 1TB 6G SAS 7.2K DP	Up to 6	1-6	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

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

	Quantity Supported	Position Supported	Controller
500GB 3G SATA 7.2K 160GB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug LFF (3.5-inch) Midline (MDL) Drives

Storage

	Quantity Supported	Position Supported	Controller
2TB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 5.4K	Up to 8	1-8	HP Smart Array P410/256 MB Controller
			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

NOTE: Second SFF drive cage requires second controller or HP SAS Expander Card (PN 468406-B21).

SATA Hot Plug LFF (3.5-inch) Entry (ETY) Drives

	Quantity Supported	Position Supported	Controller
250GB 3G SATA 7.2K	Up to 6	1-6	HP Smart Array P410/256 MB Controller
160GB 3G SATA 7.2K			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug Midline (MDL) Solid State Drives

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P410/256 MB Controller
120GB 3.0G SATA SSD			HP Smart Array P410/512 MB with BBWC Controller
			HP Smart Array P410/512MB with FBWC
			HP Smart Array P410/1G with FBWC
			HP Smart Array P411/256MB Controller
			HP Smart Array P411/512MB with BBWC Controller
			HP Smart Array P411/512MB Flash Backed Write Cache
			HP Smart Array P411/1G Flash Backed Write Cache
			HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug 3.5" Midline (MDL) Solid State Drives

QuickSpecs

HP ProLiant DL380 Generation 7 (G7)

Storage

	Quantity Supported	Position Supported	Controller
60GB 3.0G SATA SSD 120GB 3.0G SATA SSD	Up to 6	1-6	HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB with BBWC Controller HP Smart Array P410/512MB with FBWC HP Smart Array P410/1G with FBWC HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 8	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB Controller HP Smart Array P411/1G Flash Backed Cache Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P411/1G Flash Backed Cache Controller HP Smart Array P812/1G Flash Backed Cache Controller

Maximum Storage Capacity - (with D2700, SAS HDD)

Internal	8.0TB (16 x 500GB SAS SFF with addition 8 SFF drive cage)
External	50TB (100 x 500GB SAS SFF)
Total	58TB

Maximum Storage Capacity - (with D2700, SATA HDD)

Internal	4.0TB (16 x 250GB SAS SFF with additional 8 SFF drive cage)
External	50TB (100 x 500GB SATA SFF)
Total	54TB

Tape and Disk Backup

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

	Position Supported	Controller	Part Number
HP StorageWorks SCSI Tape Drives, External LTO-1 Ultrium 232 LTO-2 Ultrium 448	External	HP SC11Xe Host Bus Adapter	412911-B21

Storage

LTO-3 Ultrium 920
LTO-3 Ultrium 960
LTO4 Ultrium 1760
LTO-4 Ultrium 1840
DAT 40
DAT 72
DAT 160
1U Rack-Mount Kit
3U Rack-Mount Kit

NOTE: Please check the full compatibility information at:
http://www.hp.com/go/connect

HP StorageWorks USB Tape Drives, External DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP StorageWorks SAS Tape Drives, External DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/Zero Memory Controller	462828-B21
HP StorageWorks SAS Tape Drives, External DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Host Bus Adapter	412911-B21
HP StorageWorks SCSI Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Controller NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	AH627A

Storage

HP StorageWorks SAS Tape Autoloaders and Libraries, External 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/Zero Memory Controller	462828-B21
		NOTE: Please check the full compatibility information at: http://www.hp.com/go/connect	
HP StorageWorks Fibre Channel Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpecs.	N/A
HP StorageWorks USB RDX Removable Disk Backup System, External RDX160 RDX320 RDX500 RDX750	External	USB 2.0 port	N/A
HP StorageWorks D2D Backup Systems, iSCSI D2D2500i D2D4000i	Rack Mount	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	N/A
HP StorageWorks D2D Backup Systems, Fibre Channel D2D4000fc	Rack Mount	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/go/connect	N/A

Power Specifications

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

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

QuickSpecs

Power Specifications

HP 750W CS HE Power Supply Kit

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

HP 750W CS Platinum Power Supply Kit

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

Power Specifications

HP 1200W CS Platinum Power Supply Kit							
Part Number	578322-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	100	120	200	208	220	230	240
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating (Watts)	889	989	1290	1290	1290	1290	1290
Maximum Rated VA (Volt-Amp)	927	1031	1345	1345	1345	1345	1345
Efficiency (%)	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

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

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

Technical Specifications

System Unit	Dimensions (H x W x D) (with bezel)	SFF Drives: 3.38 x 17.54 x 27.25 in (8.59 x 44.55 x 69.22 cm) LFF Drives: 3.38 x 17.54 x 29.25 in (8.59 x 44.55 x 74.30 cm)
	Weight (approximate)	Maximum (all hard drives, power supply, and processor installed)	60.00 lb (27.27 kg)

<table>
<tr><td rowspan="10">System Unit</td><td colspan="2">Dimensions (H x W x D) (with bezel)</td><td>SFF Drives: 3.38 x 17.54 x 27.25 in (8.59 x 44.55 x 69.22 cm)
LFF Drives: 3.38 x 17.54 x 29.25 in (8.59 x 44.55 x 74.30 cm)</td></tr>
<tr><td rowspan="2">Weight (approximate)</td><td>Maximum (all hard drives, power supply, and processor installed)</td><td>60.00 lb (27.27 kg)</td></tr>
<tr><td>Minimum (one hard drive, power supply, and processor installed)</td><td>47.18 lb (21.45 kg)</td></tr>
<tr><td rowspan="4">Input Requirements (per power supply)</td><td>Rated Line Voltage</td><td>100 to 120 VAC
200 to 240 VAC</td></tr>
<tr><td>Rated Input Current</td><td>For 1200 W Power Supply:
10 A (at 100 VAC),
4.9 A (at 200 VAC)
For 750 W Power Supply:
8.9 A (at 100 VAC),
4.3 A (at 200 VAC)
For 460 W Power Supply:
5.5 A (at 100 VAC),
2.6 A (at 200 VAC)</td></tr>
<tr><td>Rated Input Frequency</td><td>50 to 60 Hz</td></tr>
<tr><td>Rated Input Power</td><td>For 1200 W Power Supply:
930 W (at 100 VAC),
1348 W (at 200 VAC)
For 750 W Power Supply:
857 W (at 100 VAC),
824 W (at 200 VAC)
For 460 W Power Supply:
526 W (at 100 VAC),
505 W (at 200 VAC)</td></tr>
<tr><td>BTU Rating</td><td>Maximum</td><td>For 1200 W Power Supply:
3530 BTU/hr (at 100 VAC),
4600 BTU/hr (at 200 VAC)
For 750 W Power Supply:
2925 BTU/hr (at 100 VAC),
2812 BTU/hr (at 200 VAC)
For 460 W Power Supply:
1794 BTU/hr (at 100 VAC),
1725 BTU/hr (at 200 VAC)</td></tr>
<tr><td>Power Specifications</td><td colspan="2">NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor</td></tr>
<tr><td>Power Supply Output (per power supply)</td><td>Rated Steady-State Power</td><td>For 1200 W Power Supply:
800 W (at 100 VAC),
900 W (at 120 VAC),
1200 W (at 200 to 240 VAC)
For 750 W Power Supply:
750 W (at 100 to 120 VAC),</td></tr>
</table>

Technical Specifications

		750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)	
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)	
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).	
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).	
Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
	Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.	
Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).	

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Idle		1P SKU	2P SKU
	LWAd	4.1 B	4.7 B
	LpAm	22 dBA	28 dBA
Operating		**1P SKU**	**2P SKU**

Technical Specifications

	LWAd	4.1 B	4.7 B
	LpAm	22 dBA	28 dBA
Emissions Classification (EMC)	FCC Rating	Class A	
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1	

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

Integrated Lights-Out 3 (iLO 3) integrated on system board	Architecture	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM
	Video Support	1600 x 1200 DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network connection (10/100Mb/s)
	Memory	128-MB DDR with ECC
	Operating System Support	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32 bit and 64 bit)
		Microsoft Windows Server 2008 Enterprise Edition (32 bit and 64 bit)
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Embedded Systems Standard Edition, Enterprise Edition
		Red Hat Enterprise Linux 5.4 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 11 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 10 (32 bit and 64 bit)
		VMware ESX 4.0
		VMware ESX 3.5.0
		Microsoft Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
	Client System Support	Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10
		Microsoft Internet Explorer 8
		Microsoft Internet Explorer 7

Technical Specifications

	Client Browser Support	Microsoft Internet Explorer 6
		Firefox 3.5 (on supported Windows and Linux systems)
		Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
	Security	Secure Socket Layer
		Secure Shell version 2
		Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO3 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML

Smart Array P410i Controller	Dimensions (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	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal (Mini-SAS) x8 wide port connectors
	Cache Memory Speed	DDR2-533MHz with 40 or 72-bit wide bus provides up to 4.2 GB/s maximum bandwidth.
	Server Interface	x8 2.5G PCIe 2.0 provides 2GB/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 64 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: RAID 6, 6+0 can be enabled with either

- Minimum of 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades
- Minimum of 512 MB BBWC or FBWC and Smart Array Advanced Pack
- Minimum of 1G FBWC and Smart Array Advanced Pack License key option upgrades

RAID 5, 5+0 (Distributed Data Guarding)
NOTE: The 256 MB is required to enable RAID 5, 5+0 support of the Smart Array P410i

RAID 1+0 (Striping & Mirroring)

RAID 0 (Striping)

Technical Specifications

	Upgradeable Firmware	Upgradeable Firmware with Recovery ROM feature

Two HP NC382i Dual Port Multifunction Gigabit Server Adapters	Network Interface Compatibility	10Base-T/100Base-TX/1000Base-TX
		EEE 802.3 10Base-T
		IEEE 802.3ab 1000Base-T
		IEEE 802.3u 100Base-TX
		IEEE 802.3ad 1000Base-TX
		IEEE 802.1p 100Base-TX
		IEEE 802.1q 100Base-TX
	Data Transfer Method	PCI Express, four lanes (x4)
	Controller	BCM5709C
	Network Transfer Rate	10Base-T (Half-Duplex) — 10 Mb/s
		10Base-T (Full-Duplex) — 20 Mb/s
		100Base-TX (Half-Duplex) — 100 Mb/s
		100Base-TX (Full-Duplex) — 200 Mb/s
		1000Base-TX (Half and Full-Duplex) — 2000Mb/s
	Connector	Two RJ-45
	Cable Support	10Base-T — Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX — Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX — Category 5 or higher UTP; up to 328 ft (100 m)

| 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. |
|---|---|---|

Technical Specifications